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ABSTRACT

This study explores education and training systems of the Caribbean nations that are members both of The World Bank and the Caribbean Group for Cooperation in Economic Development (CGCED). The study does not attempt to provide a detailed blueprint for each country or set of institutions or present new research findings. Overall, the emphasis is to highlight the commonality of education sector issues across the region and to discuss successful ongoing initiatives, as well as outline promising new policy and investment options meriting further exploration to enhance access to and the quality and efficiency of education. The "Caribbean Education Action Plan" summarizes the options. It is hoped that the report will catalyze further debate among governments and within the international development community on an appropriate human resources development strategy for the Caribbean for the 1990s and beyond. Three principal areas for further work include: (1) educational measurement and research to guide policy development; (2) the supply and distribution of educational materials; and (3) expansion of continuing education opportunities for all age groups. The report includes a foreword, an executive summary and recommendations, the proposed Caribbean education action plan, three annexes, a statistical appendix, a listing of 135 references and 47 other works consulted, and a map of the Caribbean region. (SG)

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A WORLD BANK COUNTRY STUDY

Caribbean Region

Access, Quality, and Efficiency in Education

The World Bank
Washington, D.C.

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ACRONYM LIST - CARIBBEAN EDUCATION REGIONAL STUDY REPORT

ATLI	Association of Tertiary Level Institutions
BIMAP	Barbados Institute of Management and Productivity
CARDI	Caribbean Agricultural Research and Development Institute
CARIBCAN	Canada's Preferential Trade Scheme for the Commonwealth Caribbean
CARICAD	Caribbean Centre for Development Administration
CARICOM	Caribbean Community
CARIRI	Caribbean Industrial Research Institute
CARISEC	Caribbean Community Secretariat
CARNEID	Caribbean Network for Educational Innovation for Development
CAST	College of Arts, Science, and Technology/Jamaica
CCDC	Caribbean Child Development Centre
CDB	Caribbean Development Bank
CMI	Caribbean Meteorological Institute
CODE	Canadian Organization for Educational Development
COL	Commonwealth of Learning
CXC	Caribbean Examination Council
GCE	General Certificate of Education
GNP	Gross national product
HEART	Human Employment and Resource Training Trust/Jamaica
IAEEA	International Association for the Evaluation of Educational Achievement
IAST	Institute for Applied Science and Technology
IEA	International Education Association
LMIS	Labor market information system
NCC	Non-campus countries of the University of the West Indies
OECS	Organization of Eastern Caribbean States
PACE	Programme for the Advancement of Early Childhood Education
SBA	School-based assessment
SERVOL	Service Volunteered for All/Trinidad and Tobago
UG	University of Guyana
UNECLA	United Nations Economic Commission for Latin America
UWI	University of the West Indies
UWIDITE	UWI's Distance Education System
UVI	University of the Virgin Islands
VET	Vocational education and training
YTEPP	Youth Training Employment Partnership Programme/Trinidad and Tobago

This report was written by Keith Hinchliffe, Consultant, with substantial inputs from Michael Ratcliffe, Consultant. Michael Potashnik, Sr. Human Resources Specialist, LA3HR, provided overall guidance on the report's preparation. Karen Lashman, Principal Operations Officer, LA3HR, provided valuable substantive inputs, and with the assistance of William Mayville, LA4DR, helped edit the report. Que Bui, Emma Cubillas, Emma Garcia, Nelly Vergara, and Maria Rodriguez, in particular, provided invaluable support in formatting and typing the report. The original design of the report and guidance on its initial preparation were provided by Robert S. Drysdale, former Division Chief, LA3HR. Financial support for the preparation of this report has been provided by the Overseas Development Administration of the United Kingdom, The United Nations Development Program and the World Bank.

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FOREWORD

1. *This study explores education and training systems in the Caribbean nations* that are members both of the World Bank and the Caribbean Group for Cooperation in Economic Development (CGCED)--Antigua and Barbuda, The Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago. The analysis focuses predominantly on the English-speaking countries, but data on the Dominican Republic, Haiti and Suriname are included, as available, in the early chapters for comparative purposes.

2. The regional orientation of the analysis derives from several shared characteristics of most English-speaking countries, including not only similar patterns of education system development and structure, but also small populations and still declining birthrates and hence school age cohorts, significant emigration, and economies traditionally tied to primary production but with rapidly expanding service sectors. This study does not attempt to provide a detailed blueprint for each country or set of institutions, nor does it present new research findings. While the extent of country-specific analysis varies according to data availability, the overall emphasis is to highlight the strong commonality of education sector issues across the Region, and to discuss successful ongoing initiatives as well as outline promising new policy and investment options meriting further exploration to enhance access to and the quality and efficiency of education. These options are summarized in a Caribbean Education Action Plan which follows the Executive Summary. Governments are urged to systematically review these options for potential incorporation in their education and training policies and investment programs. Donor agencies should find the Action Plan useful in guiding and periodically evaluating their education sector assistance strategies. And officials of regional organizations are encouraged to support member governments in adopting those policies and measures that necessitate regional and/or subregional collaboration.

3. The study responds directly to a request from the Ministers of Finance during early and mid-1990 meetings of the CGCED, for the World Bank to produce a report on the current status of education and training systems, highlighting key issues related thereto which could assist CGCED member governments in their efforts to formulate a Caribbean human resource development strategy. In this collaborative spirit, at each major stage of the study, the Bank has attempted to exchange ideas with governments, regional organizations and technical experts. Initial consultations included a meeting with the Caribbean Community (CARICOM) Advisory Task Force on Education; and a July 1990 mission to Jamaica, Barbados, Grenada, St. Lucia, St. Vincent, and Trinidad and Tobago to discuss the appropriate focus of the study. Actual analysis commenced in September 1990. Additional statistical data and information on national education and training systems were collected during a December 1990 mission to Barbados, Trinidad and Tobago, Guyana, and Jamaica. The Caribbean Examination Council (CXC) and a consultant from the Region collaborated in the study by processing CXC examination data.

4. More recently, two major consultative meetings were held in the Region to discuss in depth successive drafts of the study. The first, held in October 1991, at the

University of the West Indies, Jamaica, under the chairmanship of its Vice-Chancellor, Sir Alister McIntyre, brought together 15 regional education specialists asked to serve as an Advisory Committee to the study. The meeting was also attended by education advisors from the donor community. The report was revised subsequent to the Jamaica meeting, and disseminated in February to Ministries of Finance and Education of Caribbean nations, preparatory to a second consultative meeting held in Antigua February 25-26, 1992, also chaired by Sir Alister McIntyre. That meeting provided a forum for review of the draft document by over 50 senior education officers of the CGCED countries, British dependent territories, regional organizations, and donor agencies. Subsequent to Antigua, the Governments of Belize, Jamaica, Montserrat, St. Lucia, St. Kitts and Nevis, and Suriname, as well as the CXC and the CARICOM Secretariat, provided the Bank with revised, updated education statistics. They also provided comments on select issues which have been incorporated, as feasible, in the final version. The Bernard Van Leer Foundation provided very helpful comments on preschooling.

5. These collaborative efforts notwithstanding, this report remains a technical report prepared by the World Bank as a basis for discussion at the next CGCED. While every effort has been made to take into account the views of governments, regional organizations, and experts gathered over the various stages of its preparation, this report does not necessarily reflect the official position of the various governments. Indeed, a wide spectrum of views exists among these 15 nations on the priority needs and optimal approaches to enhance access, quality and efficiency of education and training, reflecting in part the varying stages of socioeconomic and human resources development of each nation.

6. It is hoped that this report will catalyze further debate among governments and within the international development community on an appropriate human resources development strategy for the Caribbean for the 1990s and beyond. It, thus, should be viewed as an input and complement to several important initiatives to define such a strategy already underway, including work of the Independent West Indies Commission, of individual countries, and of regional bodies. Among the latter is a regional review of education issues launched in November 1991 by CARICOM's Standing Committee of Ministers of Education with assistance from the Task Force on Education. Concurrently, in the countries which are members of the Organization of Eastern Caribbean States (OECS), a consultative process is underway to consider the recently published report of the Education Reform Working Group, commissioned by the OECS Secretariat.

7. A report of this nature can never be fully comprehensive. Three principal areas for further work identified by Antigua meeting participants are: educational measurement and research to help guide policy development; the supply and distribution of educational materials; and expansion of opportunities for continuing education for all age groups. Concomitantly, Antigua participants underscored the need to ensure that appropriate modalities exist, so that the actions suggested in the Bank's technical report are linked to, and as appropriate are integrated into, ongoing regional education initiatives, such as those being implemented by CARICOM and OECS. These priority next steps are discussed in a statement prepared by these regional organizations and the CARICOM Advisory Task Force on Education entitled "A Way Forward," included as Annex 3.

EXECUTIVE SUMMARY AND CARIBBEAN EDUCATION ACTION PLAN

A. Introduction

i. Most indicators of education place the majority of Caribbean countries well above the average for all countries at similar levels of economic development. Primary schooling is nearly universal, enrollment ratios for preschool and secondary education generally are above the average for middle income countries and overall literacy rates are high. The substantial progress to date notwithstanding, human resource development merits continued high priority throughout the Caribbean Region for several reasons. First, the economic future of the Region is uncertain. While rapid changes in the international economy are expected to restrict expansion of traditional economic activities, new economic development opportunities are anticipated. Traditionally, the Region's economy has been almost exclusively natural resource based, heavily concentrated in the agriculture and mining sectors. Potential new economic development paths, including in already expanding service industries, are highly dependent on technical and managerial capacity. Accelerated development of the Region's education and training systems will be a prerequisite to compete in this environment. In fact, intense competition already exists between the middle-income countries of Latin America and East Asia to expand into these higher income-earning industries.

ii. A second motivation for increased attention to human resource development is its strong linkage to poverty reduction. Convincing evidence exists that the development of human capital is one of the essential elements in reducing poverty. Income distribution in the Caribbean countries resembles that in other Regions of the developing world: the poorest 20 percent of the population receive under 5 percent of national income. As a consequence, many people, including many children, live in absolute poverty. Discussions of education and employment often focus on the relatively small numbers of unemployed graduates with higher levels of education. Those who are unemployed the longest, and receive much lower levels of income when employed, are usually those with the least formal education. Recent analyses indicate that Caribbean children from the poorest households also obtain lower quality education--even when they attain levels of schooling similar to those from higher income groups--thus perpetuating poverty within these families.

iii. Education yields other important benefits, beyond increasing individual productivity. Ample evidence exists within the Caribbean, as elsewhere, that fertility, infant mortality, and nutritional status are closely linked to levels of educational attainment, particularly of females. Further, throughout the Caribbean, the alienation of many youth is a serious social problem, exemplified by prevalent drug abuse, crime, and teenage pregnancy. Increasing educational opportunities for youth is expected to help ameliorate these problems as well as foster more positive self-images. In the Caribbean context, strengthening educational systems also is expected to be key to developing a greater sense of self-reliance, and commitment to nation-building and regional integration.

iv. By the early 1980s, several Caribbean countries had developed impressive education systems, relative to many other countries with comparable per capita incomes. Over the past decade, however, reductions in government expenditures led to considerable erosion of many of these predominantly public systems. Amid structural changes underway in many Caribbean economies, large demands now are being placed on the Region's education and training systems at a time when their efficacy is being questioned. Issues of pervasive concern to governments, educators and students and parents include equity of access to educational opportunities, particularly for youth from low income families and for average and low achievers and to post-secondary education for all youth; the quality and effectiveness of existing education and training; and the level and use of education resources. Considerable uncertainty exists regarding what programs and aspects of knowledge and skills are best for equipping current and future members of the labor force over the next decade. As the Region strives to emerge from a period of economic malaise, it seems propitious to address human resource development concerns shared across the Region, as well as to develop appropriate responses to the already discernible economic and educational challenges on the horizon.

B. Education and Development

Sector Development Constraints and Opportunities

v. Educational needs are strongly influenced by the overall size and age structure of a country's population as well as its stage of social and economic development. Throughout the Caribbean, these factors present important opportunities for, but also some constraints to, education sector development, as summarized below.

vi. **Demographic Trends**. Population projections suggest that while the size of the primary school-age group will continue to increase in Haiti and the Dominican Republic, in all English-speaking countries, except Belize, the number of children in this age group is expected to be smaller in the year 2010 than in 1985. The size of the secondary school-age group is also expected to decline over this period. Concomitantly, the number of persons 20 to 64 years of age, and hence the potential size of the labor force, will be increasing. The dependency ratio, thus, will decline rapidly over the next two decades in all English-speaking countries (from an average of 0.84 in 1980 to 0.45 in the year 2010) before rising again, as the number of persons aged 65 and older increases. These projections suggest that an important window of opportunity may exist in several Caribbean countries over the next 20 years to increase access to and quality of social services, including education, even if no significant augment in public resources occurs.

vii. **Labor Force/Employment**. Anticipated increases in the number of persons of labor force age also hold the potential for generating more domestic resources from both the private and public sectors. However, such resource mobilization will depend on expanding domestic employment opportunities and/or achieving increases in remittances to Caribbean economies from those employed overseas. The 1980s experience was not encouraging in this regard, with open unemployment increasing in almost every country. Moreover, among the young, and females of all ages group, unemployment rates remain extremely high. While levels of unemployment are widely recognized to be determined largely by the growth and structure of the economy, economic growth in turn is constrained in numerous countries by the shortage of skilled workers, as revealed in recent employer surveys in the manufacturing sector.

viii. **Emigration**. A widespread response to high unemployment and low income levels in the Caribbean has been emigration. In recent decades, the proportion of the Caribbean population voluntarily emigrating each year has been higher than that of any other Region of the world . While many migrants are very young, much of this emigration has been concentrated among the most highly trained segments of the population. In Jamaica, for example, between 1980 and 1986, the loss of skilled labor through emigration was equal to half the graduates produced by national training institutions over that period in the respective disciplines. A consequence of such high levels of emigration is lower social rates of return to investment in education and training. To a certain extent, local demand for education and training in the Caribbean is linked to anticipated labor market opportunities in North America. Hence, an important issue facing most Caribbean governments amid such high emigration is the appropriate mix of financing for human capital investments, especially at the post-secondary education level, given that individual returns on such investments often significantly exceed those accruing to the State.

ix. **Economic Performance**. The economic performance of a nation affects its educational provision in two principal ways: it influences the availability of both public and private resources to finance education and training; and together with the structure of growth, it determines the level and mix of demand for labor. Economic growth prospects in Caribbean countries are highly dependent on growth rates in major export markets. The ratio of exports to GDP is above 40 percent in 12 of the 15 Caribbean countries included in this study, compared to an average ratio of 18 percent for all middle-income countries. Annual GDP growth during the 1990s for the Caribbean's main importing countries of North America and Western Europe is expected to average 2.6 percent. Moreover, changes could possibly take place in some of the preferential marketing arrangements enjoyed in recent years by Caribbean countries which could adversely affect their exports. Further, over the last decade, the Region's manufacturing output has declined as a proportion of GDP. In this environment, tourism currently represents one of the few growth industries.

x. During the 1980s, only the OECS countries experienced positive rates of economic growth. In all other English-speaking countries (except The Bahamas)--representing, in aggregate the largest share of Caribbean population--GNP per capita declined between 1980 and 1985, but subsequently improved everywhere except in Trinidad and Tobago. In the three non-English speaking countries, per capita income decreased over the past decade. In all Caribbean countries, substantial external resource flows played an important role in sustaining public investment over the past decade. In the OECS countries, for example, grants and external public sector borrowing averaged 79 percent of total public sector investment between 1977 and 1987. In Jamaica, where income declined, foreign grants and loans averaged 73 percent of Government capital expenditures over the period 1986 to 1990. A major consequence of these resource flows has been a significant augment in the external debt-to-GDP ratio of Caribbean nations.

xi. In recent years, many of the countries undertook adjustment programs and reduced their external borrowing. Net resource flows to the Commonwealth Caribbean have subsequently decreased and net transfers are now negligible. Over the 1990s, these trends will probably continue. Thus, fiscal constraints on both current and capital expenditures are likely to remain.

xii. The economic adjustment and liberalization measures adopted across the Region seek to achieve increased efficiency and growth through enhanced competition and more open markets. If successful, these measures should positively affect labor demand. However, a more competitive environment and one encouraging growth of non-traditional exports, is also a more uncertain one. As economic activities change, so will the demand for specific skills. The flexibility of the work force, especially its mobility and ability quickly to acquire marketable skills through education and training, will largely determine the rapidity of labor absorption into emerging sectors, as well as its productivity. Labor market policies will remain a key variable affecting wages and labor mobility.

xiii. Country Size. Another major factor impacting upon educational development, particularly in the English-speaking Caribbean, is the relatively small size of the countries. With the exception of Jamaica, Trinidad, and Guyana, no country has a population over 250,000. This has two important implications. First, the administrative burden of managing the education system tends to fall on a very small number of people. As a consequence, the demands of routine administration allow little time for policy review and new initiatives. Second, the small size of individual nation's education systems underscores the infeasibility (and very high cost) of educational self-sufficiency, especially at the post-secondary level. A balance, thus, will need to be struck between the political and cultural desire to provide a full range of educational opportunities nationally, and the predictably lower costs to be obtained from sharing institutions and educational services inside and outside the Region. Indeed, a wide range of options and opportunities appears to exist for more cost-effectively managing educational provision.

Sources and Trends in Education Finance

xiv. Recurrent Expenditures. The share of national income Caribbean governments allocate to finance education varies considerably between countries. In Haiti and the Dominican Republic, the 1.3 percent share of GNP allocated to education in the late 1980s was lower than any other country in the world except the Maldives. Over the 1980s, only five of the 15 countries maintained or increased recurrent educational expenditures as a percentage of GNP. Nevertheless, in the English-speaking countries, a larger share of national income is allocated to education than any other Region of the developing world (averaging around 5 percent, compared to 3.4 percent for Latin America and 4.2 percent for Africa.) With few exceptions, the share of the public budget allocated to education by Caribbean governments is similar to the averages of East African and Latin American countries. Education's budgetary share in the larger

English-speaking countries was largely constant over the 1980s, except in Guyana. Among the non-English speaking countries, it ranged from 9 to 18 percent. In general, in the OECS countries, Belize and Guyana, the distribution of recurrent education spending, by level of education, is 60 percent primary, 30 percent secondary and 10 percent tertiary. In the larger countries, the share allocated to tertiary education rises to 20 percent.

xv. Since enrollments continued to increase over the 1980s, expenditures per student fell dramatically in a number of countries. Given the Region's already low recurrent expenditures on books and other educational materials (representing only 2 percent of total education outlays), such reductions in total recurrent spending signify that virtually no inputs beyond teachers are available in most education systems. At the same time, real incomes of teachers have declined in several of the larger Caribbean countries. At present, most of the Region's once vigorous education systems and institutions are now either underfinanced or on the verge of becoming so.

xvi. Unit Costs. Among all OECS countries, except Grenada unit costs of education, by level, are similar. In the other English-speaking countries, however, substantial variations exist, with unit costs of education in Guyana and Jamaica at the low end, and Barbados, Trinidad and Tobago, and The Bahamas at the upper. Comparing unit costs of higher levels of education with that of primary schooling, secondary education is, on average, almost twice as costly per student year, and costs of tertiary education range between two and seven times that of the primary level. Unit costs of university education range between 12 and 51 times that of primary, and substantially exceed costs of non-university, tertiary education. The highest income countries have the lowest ratios, and hence the greatest equity in distribution of resources between levels of education.

xvii. Capital Expenditures. Throughout the Caribbean, existing data suggest that over the past decade, investments in the education sector, as overall capital expenditures, have declined significantly. Moreover, their levels are strongly dependent on aid flows, particularly concessionary financing. In the OECS, education's share is miniscule, i.e. about 2.3 percent of total public investment. In Barbados, where education's share of total capital spending declined successively over the 1980s to 5.2 percent, external flows finance almost half of total capital investment. Capital expenditures for education in Guyana are also marginal, except those recently funded by development aid. In the two largest English-speaking countries, Jamaica and Trinidad, capital expenditures for education have been low and declined dramatically in real terms and as a percent of total capital expenditures, through most of the 1980s. Although education sector investment has increased in Jamaica in recent years (representing 20 percent of the education budget in 1990), 80 percent of these outlays have been funded via foreign loans and grants.

xviii. Resource Mobilization. Government financing for education will remain dependent on country-specific economic growth as well as the ability to mobilize complementary resources from students, parents, community groups, and the private sector. While serious constraints will remain over the foreseeable future on governments' capacity to increase education expenditures, given the political mandate the shares of the overall recurrent budget can be rellocated between discrete development sectors. In countries where education's present share is relatively small (such as Guyana, the Dominican Republic, Antigua, Grenada and Haiti), the potential contribution of education to economic and social development objectives provides a strong basis for building the requisite political constituency to increase its relative share. Where government education expenditures have fallen as a percentage of national income, the education sector also should attempt to increase its share. In several other countries, where the shares are already high compared to many countries in other developing Regions, attention must now be focused on improving resource use.

xix. Several non-governmental sources of finance for education exist in the Caribbean. The form of cost-sharing varies widely across countries. Numerous private for-profit and non-profit schools, colleges, and universities are operative, encompassing not only expensive, high-quality institutions, where fees are very high, but also low-cost, often low-quality institutions for the poor. The latter are often operated by non-governmental organizations (NGOs). In English-speaking countries, private primary and secondary schools are relatively scarce. When private schools exist to any significant degree, they tend to be accessible to only a small portion of students, usually those from higher income groups. This factor obviously biases any attempt to compare student achievement between public and private schools. Totally private schools, as well as those with blended public and private financing, do play a crucial role in reducing pressure on government resources. An extensive profit-seeking sector does provide post-secondary vocational training in several countries, however, responding to needs governments are unable or unwilling to meet. In Jamaica, for example, such institutions train an estimated 2,900 persons annually, or double the number of students enrolled in the nation's community colleges. The volume of in-plant training by enterprises also is expanding in several Caribbean countries. The dominant form of non-government school throughout the Caribbean, except Jamaica is the "grant aided-school", financed principally by government grants, but owned managed, and funded in part, by other institutions (usually churches). Belize has the most extensive system of grant-aided schools.

xx. Notably, the major non-governmental source of education finances throughout the Region, with the sole exception of Haiti, is private expenditures incurred by individuals to attend government schools. In Jamaica, surveys suggest that these personal expenditures exceed government outlays in all types of primary and secondary schools, and in select kinds of tertiary education. Invariably, the vast majority of these expenditures represent outlays for education-related items, particularly textbooks, writing materials, transportation, lunches, and school uniforms. Private expenditures for education per se are much more limited, with no tuition fees charged in government or grant-aided primary or secondary schools anywhere in the English-speaking Caribbean, except for a nominal charge in Belize. Given already high household outlays on education, limited scope appears to exist for increasing private financing of primary and secondary education beyond initiatives to increase parental participation in school maintenance.

C. The Education Sector

Preschool and Primary Education

xxi. Access. Preschooling is widespread, with enrollments throughout the Region significantly above the average for middle income countries. A major underlying cause of the high and increasing demand for day-care as well as preschool provision is the large number of single parent, female-headed families (including unmarried teenage mothers). According to recent UNICEF estimates, such families represent between 30 and 50 percent of all households in the Region. Preschool programs are attempting to respond to a multiplicity of needs. While helping prepare children for effective performance in primary school, many programs/centers also serve as foci for the delivery, particularly to the disadvantaged, of vital health, nutritional and other social services, including family counselling. In the Caribbean, as elsewhere, it has been difficult to confirm that long term cognitive development benefits accrue from preschool programs unless subsequent access to quality primary education also is ensured. Undoubtedly, however, preschools play a crucial role as childcare providers. Studies by the Caribbean Child Care Development Centre suggest the full potential contribution of preschooling to early child development has not yet been attained due to inadequate coordination among education, health and welfare entities providing services at this level.

xxii. In many cases, preschools focus almost exclusively on day-care, rather than on children's social and emotional development, or acquisition of cognitive and psychomotor skills important to successful primary school performance. In Jamaica, for example, where almost 80 percent of 3 to 5 year olds attend preschool, tests of primary school entrants indicate lagging cognitive and psychomotor skills in almost half the children, with performance consistently lower for boys.

xxiii. Preschooling is the level of education most dependent on private financing, with initiatives to expand access and increase its effectiveness generally led by non-governmental organizations, often in cooperation with communities, such as programs of SERVOL in Trinidad and the Van Leer Foundation in Jamaica. International experience strongly suggests that the role that preschool can play in early schooling readiness and in developing positive attitudes about schooling is enhanced, particularly for disadvantaged children, when parents and communities take an active part in its provision.

xxiv. To date, governmental support to preschool education has been concentrated in the areas of teacher training, and provision of central administrative support, coupled in some countries by relatively small subsidies. Large proportions of preschool teachers and supervisors throughout the Region, however, have had no formal training. Moreover, relatively low salaries compared to those at the primary level remain an obstacle to attracting and retaining qualified teachers at this level. Continuing fiscal constraints make it unlikely that governments will be able to significantly increase their financial contribution to this subsector. Nevertheless Regional experience suggests that governments can play an invaluable role in catalyzing expansion of enrollments, ensuring and improving quality, containing unit costs, and helping mobilize additional resources for preschool education.

xxv. With the exception of Haiti, Caribbean governments have been extremely successful in achieving high levels of participation at the primary level. Recent estimates suggest almost universal coverage of the relevant age group, thus sustaining enrollment ratios already achieved over a decade ago in the larger countries. In the majority of Caribbean nations, however, the actual number of children enrolled in primary schools declined over the 1980s as a result of both declining fertility and emigration. The one major continuing gap in coverage at the primary level is education for children with special needs, particularly those handicapped or with learning disabilities, for which existing education systems are poorly equipped in terms of both resources and programs.

xxvi. The internal inefficiency of many primary schools, as reflected in numerous indicators, is of widespread concern. While dropout rates in English-speaking countries are relatively low compared to many Latin American countries, levels of repetition are often unacceptably high. Repetition stems in part from poor school attendance, with average rates of only 50 percent in some countries. In Haiti and the Dominican Republic, not only repetition but also school desertion rates are alarmingly high, with only one-third to one-half of entrants completing primary school.

xxvii. Moreover, the overall quality of schooling provided to the majority of primary students, and hence levels of achievement, are widely perceived as poor. The most utilized indicator of achievement is results of common entrance examinations administered at the end of the primary cycle in all English-speaking countries except St. Kitts and Nevis. Such data need to be interpreted with caution, since pass rates are often dictated by the number of secondary school places available. Such tests suggest, however, that achievement levels in reading, writing, and numeracy are low throughout the Region. According to 1989 exam results in Jamaica, for example, 48 percent of primary school graduates would be classified as functionally illiterate, i.e. unable to read with comprehension at the fourth grade level. Notable differences in achievement at the primary level, as measured by common entrance examination results, exist across schools within a given country, as well as by gender (girls typically scoring higher than boys) and school location (with urban school children generally excelling over rural). Few studies have been undertaken to date in the Region on the determinants of academic achievement among school children or causes of differential primary school achievement between schools with similar student mixes. Among priorities for such research is exploration of the causes of boys' comparatively poor academic performance to help identify appropriate remedial actions.

xxviii. Teachers and Other Inputs. Throughout much of the English-speaking Caribbean pupil/teacher ratios are below the 30:1 average for all middle income countries. The quality of teachers, and access to other educational inputs, varies across the Region, however. In Guyana, Belize, OECS countries, Haiti, and the Dominican Republic, learning is hampered by the large proportion of teachers who are untrained or inadequately trained, and the paucity of teaching materials, particularly textbooks. In contrast, in Jamaica, Trinidad, and Barbados, the majority of teachers are trained and access to books is reasonably good. Region-wide, low morale and high teacher attrition rates are common, rooted in often non-competitive salaries, limited career development potential, and poor working conditions.

xxix. Low achievement levels in much of the Region also can be attributed in part to inadequacies in the existing school curriculum and in the time allocated within the curriculum to core subjects, weak school management, and the poor physical state of many school facilities as a result of low capital investment and maintenance over the past several years. The poor socioeconomic and nutritional status of many students, and linguistic barriers to learning (with Creole the first language of many students in the Caribbean), also adversely affect learning outcomes.

xxx. **Policy and Investment Options**. Most Caribbean nations may wish to actively promote greater private sector and NGOs participation in the sector as a means to expand access to preschool education, particularly for children from low income families. Additional potential approaches to increase such coverage rapidly include: (a) utilizing more in-service, on-the-job training for preschool staff (including volunteers), supplemented by periodic refresher programs; (b) promoting formation of informal playgroups in private homes for infants and preschoolers under 3 years of age who already are participating in either day-care or preschool programs, thereby releasing formal preschool places for older children; (c) operating double shifts; and/or (d) utilizing excess space in larger primary schools as the primary school age cohort, and hence primary enrollments decline over the next decade.

xxxi. To ensure safe learning environments, consideration should be given to setting minimum acceptable physical standards as well as to requiring local communities to accept responsibility for providing and/or maintaining physical facilities as a precondition for government financial support. In the design of preschool programs, governments should encourage development of national preschool organizations to coordinate complementary health, nutrition and social service activities across ministries and agencies, as well as creation of a Regional Training and Resource Center, financed jointly by governments, private and donor entities to guide preschool program development and evaluation. All initiatives should seek to increase the direct involvement of parents and community groups in child development-related activities.

xxxii. The key challenge for the 1990s at the primary level, however, is to improve the quality of such education. To this end, country data suggest the desirability of: (a) either consolidating schools or adopting more multigrade teaching approaches in presently sparsely populated areas as well as those areas affected by declining school age cohorts; (b) ensuring all schools have a minimum acceptable level of educational resources; (c) increasing the extent and quality of student assessment for diagnostic purposes and to guide, possibly via creation of a regional curriculum committee, reforms needed to improve achievement; (d) setting and monitoring standards for instructional time, particularly in core subjects; (e) adopting alternative remuneration packages and instituting career structures to improve teacher morale and relatedly reduce attrition; (f) regionally standardizing and increasing availability of culturally relevant, low-cost education materials, particularly textbooks; (g) strengthening in-service training for all teachers and providing more management and team leadership training to head teachers;

and (h) launching programs for school rehabilitation and construction, including upgrading of equipment. Increasing community involvement in schools (e.g., developing or strengthening local school boards), especially by fostering interaction between instructors, school administration, and parents, will be an essential corollary.

Secondary Education

xxxiii. Access. Governments throughout the English-speaking Caribbean also have been highly successful in providing access to secondary education, with gross enrollment rates high relative to the middle-income countries average (54 percent). On average, some 75 percent of the relevant age group obtain at least three years of post-primary education. In the non-English-speaking Caribbean, the Dominican Republic is near this average, but Haiti falls well below.

xxxiv. High secondary coverage levels do not necessarily translate into equity of access to a similar form or quality of schooling. In most countries, in fact, only one-quarter to one-third of primary school graduates pass the common entrance examination and actually matriculate in the relatively well-resourced, five-year secondary schools that lead to entry in high-prestige regional examinations (CXC) and international qualifications (i.e., O-levels), and ultimately provide substantial post-secondary education and employment opportunities. The typical enrollment pattern in these secondary schools is 60 percent female, 40 percent male, reflecting the generally better performance of females on the common entrance examinations. Throughout the Caribbean, the vast majority of students enrolled at the secondary level attend a variety of other, usually under-resourced schools (many not formally classified as secondary education), only a few of which lead to recognized certification for further study or employment.

xxxv. In the English-speaking countries, governments are the principal provider of secondary education. Private sector involvement, where existent, is typically a joint undertaking with government, with most recurrent financing provided by the latter. Recent enrollment expansion in the Dominican Republic and Haiti is due largely to increases in private sector provision, especially by churches.

xxxvi. **Student Achievement**. Secondary school achievement levels are generally low, as measured by the Region's most commonly used benchmark--pass rates on CXC examinations. Notably, the proportion of secondary students taking the CXC varies between countries from one-quarter and two-thirds of those enrolled. Among exam entrants, English and mathematics scores are extremely low, with only between one-quarter and one-third of exam entrants receiving passing grades, i.e., Levels I or II. The percentage of CXC candidates achieving passing grades in four or more subjects at one sitting (generally viewed as "successful" secondary schooling) currently averages only 13 percent across the Region. In 8 of the 11 main countries administering the CXC examinations, pass rates declined between 1984 and 1989 for all subjects; and English rates declined over this period in all countries. Examination results from other, non-CXC types of secondary schools are not readily available. Existing data reveal average scores on secondary school certificate exams, where administered, also are exceptionally low; and tests given to entrants of post-secondary skill-training programs, indicate that some graduates are barely literate.

xxxvii. The few studies conducted on determinants of achievement at the secondary level suggest that socioeconomic status is more important than gender, though there are strong gender-related trends associated with choice of subject matter studied, and ultimately with differentials in CXC test results. The type of school and its management also seem to strongly influence achievement. The principal underlying causes of lower than desired achievement levels remain unclear, however, and require further investigation.

xxxviii. **Vocational Education and Training (VET)**. Caribbean governments long have advocated formal, education-system based prevocational and vocational programs. Such a stance reflects often widely held beliefs that academically-oriented secondary schooling is neither effective nor relevant for many students. Moreover, many governments feel that acquisition of job-related skills enhances graduates' employment opportunities, as well as creates a pool of skilled labor to foster industrial development and reduce technological dependency. Most countries also offer skills-training via nonformal and employer-based programs and training institutions.

xxxix. The small enrollments in many such programs, coupled with results of the few cost-effectiveness studies conducted in the Region over the past decade, reveal the costs of prevocational and vocational training are substantially higher than traditional secondary education, predominantly due to significant non-teacher outlays. At the same time, tracer studies suggest minimal, if any, differential in labor market outcomes and long-term earnings streams between traditional secondary education and such vocationally-oriented training, particularly industrial and craft programs. Such results have prompted a rethinking of current approaches to pre-vocational and vocational training in the Caribbean, as elsewhere.

xl. **Resource Inputs** Though the average unit cost per student year of secondary education is twice that of primary, substantial variations exist between types of schools not only in costs but levels of achievement, underscoring the value of further research on the most cost-effective approaches. In general, student/teacher ratios in Caribbean secondary schools are substantially lower than other countries at similar levels of development. The quality of the secondary school teaching force varies considerably across the Caribbean, ranging from predominantly well-qualified teachers in the larger English-speaking countries to many poorly qualified ones in the smaller islands. Government expenditures on educational materials tend to be very low. Little attention is given in most countries to developing curricula and educational aids responsive to the needs of the vast majority of secondary students--those not enrolled in academic streams culminating in the CXC examinations.

xli. Overall, relatively few students have all requisite textbooks. Innovative schemes in a few countries have greatly increased access, e.g. Jamaica's textbook rental program. However, even where textbooks are available, often relatively low levels of literacy and numeracy hamper their effectiveness. Recognizing that exisiting textbooks are inappropriate for a large proportion of secondary students, several regional initiatives are underway to develop new books responsive to a wider range of abilities. Efforts also are being taken to further reduce acquistion costs, and thus expand access, i.e. regional standarization of curriculum and bulk purchasing.

xlii. Attention is also being given to increasing teaching time in core subjects, especially English, mathematics and sciences, during the latter years of secondary school. Pervasive deficiencies in secondary school facilities and equipment also constrain learning opportunities.

xliii. Policy and Investment Options. Several options merit consideration to expand access to the still significant number of youth not enrolled in any form of secondary education, and those unemployed. These include: (a) providing the sixth year of study in special colleges or via existing tertiary institutions, thus reducing unit costs and releasing secondary places; (b) increasing distance education combining self-study and radio with supervised study--a promising approach in particular for graduates of multi-age and other non-secondary schools, and the unemployed; (c) encouraging the operation of private correspondence schools; and (d) expanding evening classes and continuing education departments of tertiary colleges.

xliv. Regional experience suggests considerable potential gains in the efficiency of secondary school operation, thereby releasing resources to expand access and enhance quality were governments to consider: (a) creating larger classes, particularly in the fourth and fifth years of study, via streamlining of the curriculum and reducing electives, especially in technical-vocational subjects with typically small class sizes; (b) amalgamating small schools operating in many of the smaller islands; (c) increasing textbook availability via standardizing basic textbooks nationally (and possibly regionally) to facilitate larger print-runs and bulk purchasing, and encouraging development of a secondhand textbook market as well as expansion of book rental schemes to generate revolving funds for additional purchases; and (d) increasing head teacher and school management responsibilities for teacher evaluation, student assessment and feedback, and school maintenance, while concomitantly introducing incentives to improve student performance.

xlv. To guide design of interventions to enhance academic achievement, more research on its determinants is needed. Existing data suggest that countries should consider adopting a common core curriculum in the first three years of secondary school encompassing mathematics, English, science, and social studies. Development of a national curriculum for the latter years of the secondary cycle, building on the proposed core in the earlier years (junior forms), may also be desirable to meet the needs of a full range of academic abilities, and permit introduction of a national secondary school diploma. Gradual introduction of a Region-wide curriculum may be considered, thus facilitating use of regional examinations, i.e., CXC, as a uniform benchmark of student achievement. Alternatively, as already under consideration, countries may want to revise existing CXC syllabi and simultaneously introduce a single grading system, to cover virtually the whole range of student abilities. Development of more diagnostic-oriented, periodic assessments and tests could contribute to more effective monitoring of student achievement and curriculum reform. Experience suggests that prevocational and vocational programs should be introduced or expanded cautiously, and be concentrated in the final year of secondary school.

Tertiary Education

xlvi. Access. Tertiary education encompasses all post-secondary education and training programs offered throughout the Region, except university education. It includes full and part-time teacher education, technical-vocational programs, and General Certificate of Education (GCE) A-level courses, as well as formal and nonformal skills training offered by public institutions, employers, private institutions and NGOs. In the English-speaking countries overall tertiary enrollment levels almost tripled over the last two decades, largely in response to high proportions of unemployed youth. Nevertheless, transition rates to tertiary and university education are much lower than would be expected given relatively high primary and secondary enrollment ratios. Only 6.1 percent of English-speaking Caribbean nationals 20-24 years of age are enrolled in tertiary education or training programs (of which, on average, 28 percent are engaged in academic studies, 16 percent in teacher education, and 56 percent in technical-vocational training). If university level enrollments are added, total coverage among this age group increases only to 7.8 percent. These ratios are only about one-half combined tertiary and higher education enrollment ratios for this age cohort in Latin America and all middle income economies. Available data suggest females are underrepresented in tertiary programs given their strong secondary performance, reflecting both demand and supply factors. Overall, females dominate teacher training programs, while male enrollments are concentrated in technical-vocational areas. The concentration of tertiary institutions in urban areas can increase significantly the costs of attendance for rural students.

xlvii. Relatively low tertiary enrollments in the Caribbean are due to several factors. Many students' poor secondary school performance precludes entry to higher levels of education (albeit that application of admission criteria vary widely by country and course of study). Relatively high private costs, e.g., transportation, board and materials, and in most technical-vocational programs tuition also constrains access. Moreover, where courses are not available locally, external training program costs can be extremely high, even within the Region , i.e. average aggregate annual costs of study of US$5000 to US$6000. Scholarship and loan schemes are extremely limited at the post-secondary level. These factors contribute to the relatively low average level of education and training of the typical English-speaking Caribbean worker, with generally less than 5 percent of the labor force in any country having had tertiary or university education--significantly below the middle income country average. This contributes to often critical shortages of professional managerial and skilled technical workers as well as professionally trained teachers, as documented in many countries.

xlviii. Program Quality. Monitoring the pedagogic quality and effectiveness of tertiary education and skills training in the Region is complicated by the proliferation of institutions (national, regional and external). The absence of clear proficiency specifications and standardized certification hampers the effective and efficient operation of an accreditation system within the Region. Further, this leads to what can be very costly approaches when individuals attending tertiary level courses in regional or external institutions are forced to repeat either components or whole programs already mastered in another institution.

xlix. Overall, given highly restrictive admission criteria for formal tertiary education, achievement levels and graduation rates would be expected to be high. However, in many countries, performance in A-level (essentially university preparatory) education, teacher training, and technician and craft programs is poor. Notably, only one-third of those pursuing A-level studies pass two exams--the standard university admission requirement. The rest are neither better prepared, nor gain better salaries, than secondary students with CXC passes.

l. A form of post-secondary training, widely available in many countries, is short-term (3- to 12-month) skills training targeted to specific productive activities. The nature and organization of such programs vary considerably, as do outcomes. In general, however, job placement rates have been high. Existing data suggest part-time adult education and workplace-based employee training in particular can be very cost-effective.

li. Resource Levels and Use. Not surprisingly, given low enrollments in many countries, tertiary education allocations represent a relatively small share of total public educational expenditures (averaging across the Caribbean half that in Latin America). In a number of countries, tertiary education expenditures declined in real terms over the past two decades. In several small countries, expansion of enrollments, and ensuing increases in recurrent expenditures, have been catalyzed by externally financed capital investment projects. The unit costs of skills training programs are similar to those of more formal institutional programs.

lii. Several successful efforts have been made to consolidate tertiary education and training programs within countries, and achieve specialization between countries. Substantial inefficiencies remain, with considerable potential to further reduce unit costs. Attaining such savings is not always easy. The small size of many institutions, coupled with their carefully guarded autonomy and the limited number of qualified applicants, hamper attainment of economies of scale, and contribute to duplication and overlapping functions between institutions. It also adversely affects countries' ability to offer a wide range of cross-curricular paraprofessional training programs. Ratios of staff or teacher to student are often very low (i.e., a median of 1:11 in 10 English-speaking countries) and the quality of staff are highly variable. Many teachers are inadequately trained for teaching, particularly in the technical-vocational areas, contributing to inefficient resource use. Underutilization of physical capacity is common. Moreover, the quantity and quality of physical plants, equipment, and particularly books and other educational materials are reported to be below satisfactory levels in many countries.

liii. Management and Labor Market Linkages. Throughout the Caribbean, labor market information systems are still insufficiently developed to identify precisely and expeditiously tertiary training needs. Several initiatives are underway to redress this problem, including training of analysts. Institutions such as Jamaica's College of Arts, Science and Technology (CAST) and the Barbados Community College--both highly autonomous institutions--offer a larger number of both part-time and revenue-earning tertiary education programs, and operate more advanced vocational guidance systems, than institutions more directly tied to governments. Increasing linkages between tertiary institutions and the business community may be crucial to enhance the Region's ability to address current as well as emerging labor market needs. It also can help mobilize additional private sector resources to close the still large gap in supply of select categories of workers.

liv. Policy and Investment Options. Strengthening the contribution of tertiary education to human resource development in the Caribbean will necessitate: (a) improving capabilities to analyze labor market demand; (b) expanding access by reducing unit costs of publicly provided tertiary education, particularly through consolidation of courses; increases in teaching loads and use of more multipurpose teachers/staff in more multi-skill oriented programs, augments in evening and part-time programs; and expansion of distance education approaches; (c) given fiscal constraints on expansion of conventional, full time, institution-based programs, utilizing existing and expanding selectively in-service training by the private sector and NGOs, particularly for self-employment; (d) diversifying financing, and catalyzing greater cost-sharing via strengthened national training agency linkages to employers, trade unions, and public entities with access to training funds; and (e) granting greater autonomy and responsibility to education and training institutions, while promoting greater regional cooperation, as appropriate.

University Education

lv. Access. University education in the English-speaking Caribbean is dominated by two regional universities, the University of the West Indies (UWI) and its various campuses, and schools of the University of Guyana (UG). Undergraduate programs also are offered by CAST in Jamaica, the Univesity College of Belize; and by some of the smaller islands, including OECS linkages to the University of the Virgin Islands. In aggregate, however, despite significant growth over the 1980s in number of students (particularly females), a relatively low proportion of the relevant age group is currently enrolled in university level programs. In the 19 English-speaking Caribbean countries, enrollment ratios are less than 1 percent of the age cohort, and in another 10 they are below 5 percent. Notably, the proportion of students from the non-campus countries is small (and declining), reflecting modifications to the financing formula. Current levels are well below that expected given their university age cohorts. Among initiatives to increase access to university education in the Caribbean are UWI's introduction of distance learning programs, and some teaching of first-year programs in tertiary colleges. Other approaches are foreseen by UWI as well as other universities.

lvi. Underlying low enrollments and graduation rates from Caribbean universities are both supply and demand factors. Not only are there a limited number of full-time places, but few universities offer programs convenient for working individuals. Further, many specific programs are not offered at all on the Region. On the demand side, relatively small numbers of secondary school graduates meet university admission requirements; and among those admitted, dropout and repetition rates are high. High private costs (including often partial tuition, as well as other fees, board and books) coupled with inadequacies in existing financing mechanisms further constrain enrollments, particularly of those from low-income families. The availability of overseas education opportunities, especially in North America, also exerts a powerful pull on students, abetted by such institutions' often lower entrance requirements, the relative ease of progression to advanced courses, and wider range of studies available. The availability of government financial support for some overseas programs, as well as support from family members who have emigrated, and/or opportunities to obtain part-time employment to help defray expenses also increases the attractivness of such alternatives. In fact, most higher education is acquired outside the Region. These access problems contribute significantly to the Region's brain drain.

lvii. Trends in Fields of Specialization and Employment. Undergraduate studies at UWI have been heavily concentrated in the liberal arts and general studies, followed by the social and natural sciences. Advanced degrees have been awarded predominantly in social and natural sciences and medicine. Among certificate and diploma courses, education and the social sciences dominate. The remaining faculties graduate relatively small numbers.

lviii. Two UWI campuses compile data annually on graduate placement. The most important changes apparently occurring over the 1980s were an increase in the proportion of graduates unemployed one year after graduation (especially arts and science students) and an increase in private sector employment, albeit the majority of graduates still enter public service. Were the proportion to enter the private sector to continue or intensify, the match of existing degree and certificate/diploma courses with labor market needs will need to be reviewed, in collaboration with the private sector. Additionally, attention will need to be given to defining the appropriate mix of public and private financing.

lix. Costs and Funding Sources. At UWI, costs of study vary substantially by faculty, campus and student's country of origin, resulting in inequities in subsidies received and relatedly the relative portion of costs borne directly by individual students. Average unit costs per year of univerity study are high in the Caribbean relative to many areas of the developing world. Moreover, the costs tend to be considerably higher than in the Region's tertiary and other higher education institutions. The cost of part-time university study, however, is much lower than full-time study, especially when linked to distance learning programs; it thus has been an important vehicle for expanding access to low-income youth. Indeed, part time enrollments are increasing rapidly.

lx. Relatively high unit costs at UWI are attributable in part to the need to pay competitive salaries to retain qualified faculty with alternative teaching opportunities in North American colleges and universities; significant nonacademic expenditures (including those for nonteaching staff); high fixed costs coupled with often low enrollments in some programs; and underutilization of some facilities. Like many similar institutions, expenditures on equipment and materials and plant maintenance are low at both UWI and UG.

lxi. Almost all university income derives from governments and donors. However, at UWI campuses in Jamaica and Trinidad, student fees are charged to help finance operating costs. Additionally, students must pay their living expenses. Student loan schemes have been introduced with vary success in some Caribbean countries. Among problems encountered are the inability of many students to mobilize supplementary support needed, given loan ceilings; and the significant arrears which have accumulated, i.e., Jamaica, and to a lesser degree in Barbados. Moreover, where loans are available, many students prefer to use them for overseas study than at regional universities. Amid continuing constraints on government finances, further examination of viable loan schemes and mechanisms to diversify sources of financing (including potential income generating schemes) seem warranted to increase access, and further reduce public costs.

lxii. Linkages between Tertiary and University Education. UWI recognizes the need to better define its relationship to Regional tertiary institutions, and its role vis-a-vis competing North American academic institutions. UWI can play a critical role in helping rationalize program equivalencies and institute certification Region-wide. UWI's ability to reduce its unit costs, expand outreach, and diversify its sources of finance will determine the success of its plan to expand significantly enrollment, i.e., to 18,500 students by the year 2000, a substantial share of which growth is expected to come from the non-campus countries (NCCs).

lxiii. Policy and Investment Options. A quantum leap is needed in university output, particularly in the NCCs, to have any significant impact on the proportion of the Caribbean work force with higher education. To attain desired increases in post-secondary enrollments, Caribbean governments may wish to consider: (a) adopting more modular, competency-based instructional approaches and expanding work/study or "sandwich" and part-time courses and distance learning within existing tertiary institutions or adult education units; (b) improving the training capacity of employers, NGOs, and proprietary institutions by removing constraints, introducing tax incentives, and/or providing subsidies to be channeled via efficient non-government training organizations; and (c) mobilizing additional resources, and rationalizing levels of subsidies for distinct student populations (e.g., part- and full-time, teacher training, and technical courses).

lxiv. The effectiveness and efficiency of the A-level entry requirement also should be reviewed to ascertain the feasibility of replacing it with a more comprehensive curriculum. To enhance the overall quality of university education and increase the employment potential of university graduates, consideration might be given to: (a) revitalizing staff development programs to upgrade faculty; (b) assessing the universities' role in expanding access (particularly in NCCs) to non-degree, certificate and diploma courses, especially in scientific and technological, language, and legal fields related to current and projected labor market needs, and that permit progression from para-professional to professional degree programs; (b) expanding the "Challenge" social science program to other subjects, and extending the duration of such programs, increasing distance education facilities, and establishing a center for distance higher education in the OECS to provide UWI, CAST, and similar extramular programs. Improving the research capacity of the Region's universities also could contribute to Caribbean development.

lxv. To improve operational efficiency and mobilize increased financing for university education, governments and universities together should explore the feasibility of: (a) recovering an increasing share of higher education costs, while strengthening and expanding student scholarships and loan schemes to ensure access by lower income students; (b) securing complementary financing for non-personnel inputs, such as library books, periodicals, and laboratory and workshop consumables; (c) setting minimum class sizes and reducing the number of nonacademic personnel relative to faculty and students; (d) reviewing subsidy levels provided to students studying overseas, and exploring least-cost approaches to higher education in both campus and NCCs, including potential mechanisms to promote more competition for students; (e) revising, as appropriate, the current UWI financing system to enhance equity of opportunity between countries and students; (f) introducing education-related taxes to be levied on firms; and (g) reorienting donor-financed scholarship programs to encourage over the medium-term the decentralization of all except the final two years of undergraduate studies to local, tertiary institutions, thereby reducing costs while expanding campus places and building national education capability.

Education System Management

lxvi. Caribbean education systems typically have adopted highly centralized management approaches and administrative structures. Virtually all resources are controlled by central ministries, as are responsibilities for all activities from policy formulation and planning through acquisition of system inputs, including recruitment and appointment of staff. This approach has several detrimental effects on system administration. First, the flow of materials and supplies, information, and supervisory assistance is erratic, particularly in countries with widely dispersed communities--contributing to many schools' sense of isolation. Second, limited opportunities and incentives exist for institutions to adapt education to local community needs, or therefore to encourage communities to contribute to education financing to achieve mutually desired ends. Recent attempts to increase community involvement in primary schools in Jamaica represents a positive step in this direction. Third, especially in smaller countries, senior managers are often overwhelmed by a multiplicity of administrative functions that hamper fulfillment of their primary responsibilities. This contributes to the lack of adequate quality control and paucity of diagnostic-oriented achievement testing systems and curricula for high-risk, low achieving students.

lxvii. Priority attention should be given to rationalizing central ministry functions, focussing on policy and planning, curriculum development and material production, measurement and evaluation, staff development, and monitoring of the system's overall performance. Other selective functions might best be decentralized to communities and head teachers, or privatized. Strengthening the institutional capacity of Ministries will be essential for them to fulfill their policy, planning and monitoring role, and to develop low cost educational materials. This will necessitate increased training of ministry staff, including managers; strengthening of planning and operations research capacity; and improving management information systems and student assessment programs.

lxviii. Across the Region, substantial gains in efficiency and effectiveness of education and training appear possible if each level of authority is made responsible for strengthening the capacity and accountability of those institutions within its immediate jurisdiction. At the regional level, such an approach would include the UWI strengthening tertiary colleges and accreditation procedures, and the CXC strengthening national examining boards and testing units. Another important aspect of a devolutionary approach is to ensure that no major restrictions are placed on establishing private education and training institutions.

lxix. Given the small scale of many Caribbean countries, increased attention to regional initiatives and institutions holds much promise for attaining economies of scale that could lead to more efficient policy coordination and program development. National educational institutions and processes often face considerable political and cultural pressures to expand. The effects of such expansion should be carefully weighed against the potential gains in educational system efficiency and effectiveness from approaching diverse educational needs within a well-coordinated Regional framework. Establishing means to attain beneficial external linkages--both within and outside the Region--and developing appropriate information systems to increase awareness of overseas institutions' strengths and weaknesses are of fundamental importance. Cost-effective approaches to expand outreach education in the Region also might be explored. Regional consideration of course articulation and accreditation procedures also appears desirable, possibly through establishment of a Regional accreditation body.

lxx. Currently, many of the mandates and responsibilities for Regional policy development are fragmented. Also many of the institutions providing such services are almost totally dependent on government funding and donor assistance, both of which are highly volatile. Governments increasingly find it difficult to meet their fiscal obligations to such entities. Hence, a key challenge for Regional institutions, and the governments that fund them, is to prioritize their work, concentrating efforts on those services in which they have a clear comparative advantage, and where efficiency gains are anticipated and devolve remaining responsibilities to national levels. Concomitantly, they need to diverify their sources of financing to support their activities, and promote increased intraregional exchange of information and consultants and personnel.

D. External Support

lxxi. The main externally-assisted education and training programs in the Caribbean are delineated in Annex 1. Overall, some 20 official aid agencies are active in the Region, including 10 bilaterals and 10 multilaterals. In addition, several NGOs and foundations provide education program support. In the larger countries, external assistance in recent years appears to have shifted toward support for primary or basic education. In smaller countries, such aid remains focused largely towards secondary (including technical/vocational) and tertiary education. While multilateral donor-assisted projects tend to concentrate on capital investments, technical assistance (including overseas training) represent relatively larger shares of bilateral-assisted programs. Activities to strengthen system management and institutional capacity have only recently been supported. More attention will need to be given by all donors to strengthening institutional capacity, consistent with ongoing reorientation of education programs from expansion of infrastructure towards enhancement of the quality, equity, and cost-effectiveness of education systems. A brief account of the World Bank's lending experience in education in the Caribbean and the lessons learned is provided in Annex 2.

lxxii. External assistance will remain a major source of education and training program financing over the foreseeable future, especially in the smallest and poorest Caribbean countries, given fiscal constraints. Continued high dependence on external resource flows to finance a significant proportion of new education programs places a special responsibility on donors to ensure resources are well targeted to priority needs as determined by the governments. Analysis suggests that the highest returns to such external financing will come from activities focused on increasing the quality of schooling, particularly in non-CXC secondary streams in which the vast majority of the Region's students are enrolled. This will require increased external support for: (a) development and supply of teaching materials; (b) development of new curricula for lower secondary forms; (c) testing and measurement units to improve curriculum, define and measure student performance, and specify program equivalencies; (d) operational research to identify viable approaches to contain costs, diversify finance, and ensure effective school maintenance and decentralized management; (e) development of in-service teacher training programs to increase the effectiveness of core subject and multi-grade teaching; (f) initiatives by governments and NGOs to increase the active involvement of parents and community groups; and (g) upgrading programs that facilitate entry to tertiary-level courses.

lxxiii. An essential corollary will be the strengthening of national and Regional institutional capacity to carry out policy analyses, as well as to design and implement programs to attain desired overall education system improvements. One of the strongest incentives donors can provide governments to undertake requisite education and training reforms is the assurance of long-term external financial support. Such external financing is likely to be increasingly tied to governments' design of a mutually agreed education policy framework and identification of a series of complementary programs to support sector development rather than preparation of discrete projects, as traditionally has been the case. This underscores the need for more effective donor coordination. Additionally, technical assistance will be needed for policy development and related measures, such as those outlined in the Caribbean Education Action Plan.

E. Suggested Strategies and Priorities

lxxiv. In summary, across the English-speaking Caribbean, present levels of coverage of both primary and lower secondary schooling compare favorably with that of middle income developing countries. Existing data on enrollments in national and Regional post-secondary institutions suggest that a much smaller proportion of this age group receive higher education than in the average middle-income country, especially in Latin America. Anticipated changes in the structure of Caribbean economies will require larger numbers of tertiary and university trained workers. Major challenges now facing Caribbean nations are to expand access to higher education, while concomitantly enhancing the quality and equity of access to education and training programs at all levels. Achieving these goals will contribute to both poverty alleviation and economic growth.

lxxv. Throughout the Region, achievement levels need to be raised in all primary and secondary school subject areas, but particularly in English and mathematics. Current academic performance levels are considerably below those required to produce a steady flow of students adequately prepared for tertiary and university education and training, or to ensure that new labor force entrants can be fully integrated into, and attain sustained participation in, the Region's rapidly evolving economies. Boys in general, and rural children in particular, are at high risk of low academic achievement at the primary level.

lxxvi. Within secondary education, the level of achievement tends to vary by gender, socioeconomic group, and type of school, with overall achievement considerably below potential. Increased attention should be given to ensure all children have access to quality secondary education, regardless of the type of stream in which they are enrolled. This implies a more equitable distribution of resources across distinct schools. Existing data reveal that the effective education, and hence ultimately achievement, of the majority of secondary students, i.e., those in non-CXC oriented schools, are hampered by the lack both of financial and pedagogical resources, as well as by inadequate attention to curricula. There is an urgent need to replace (or significantly modify) the current secondary education and training system, which currently offers access to relatively high proportions of the relevant age group, but concentrates resources on a minority. Educational opportunities across a broader range of student abilities and aspirations need to be expanded.

lxxvii. Resource mobilization will be a prerequisite to attain desired improvements in access, equity and efficiency of education in the Caribbean. Historically, the English-speaking countries have relied more heavily on governments to finance education than other Caribbean nations. Education outlays by most governments declined in real terms over the past decade. Nevertheless, they remain high relative to many other middle income economies as a share both of total government expenditure and of GDP. Future increases in government revenues are by no means certain. High debt-service burdens accumulated in virtually all Caribbean countries over the 1980s, coupled with traditionally low recurrent budget surpluses, will require tight reigns on fiscal spending over the 1990s.

lxxviii. More participatory financing strategies, generating resources from the public and private sectors, as well as from individuals, thus are essential to further develop Caribbean education and training systems. Among the suggested components of such a financing strategy would be: redesigning budget norms to ensure that any savings accruing from declining primary enrollments (as the school age cohort decreases) remain within the sector; at a minimum, restoring to early 1980 levels education's share of GNP; using social and economic indicators to secure for the education sector a greater share of the public investment budget; rationalizing the use of donor-provided foreign exchange; improving the policy environment to promote expansion of private training institutions and in-plant training; considering how best to promote competition between public and private training institutions, and thus contribute to desired improvements in quality, possibly through such mechanisms as vouchers or other subsidy schemes; and exploring the implications of charging tuition in all areas of post-secondary schooling.

lxxix. Most countries will need to take steps to ensure that any additional education resources mobilized are put to their best use, and allocations are not spread too thinly, and hence fall below the threshold required to achieve desired impacts. Each Caribbean government confronts distinct educational and economic scenarios, reflecting its own unique history. Further, the age structure of the population and the condition of schools may differ significantly across countries, as do transition rates between levels of education, and the structure of schooling. Moreover, current and projected investment needs of discrete educational systems are strongly influenced by past investment patterns. Thus, the level and mix of education sector financing required to accelerate human resource development must be determined on a country-specific basis.

lxxx. The need for such country-specific analyses notwithstanding, considerable evidence exists across the Caribbean that substantial payoffs from both an equity and efficiency standpoint can be expected from assigning primary and secondary levels the highest priority for use of public education resources. Notably, the recurrent costs of formal, full-time post-secondary education are much higher than those at earlier levels, as are the capital costs. Given well-recognized fiscal constraints throughout the Region, it is unlikely that a sufficient increment in public resources can be achieved (even if primary and secondary education unit costs are reduced), to finance fully expansion of tertiary and university education to levels similar to many Latin American countries. Moreover, as this report highlights, achieving any significant increase in post-secondary enrollments inherently will depend on enhancing the quality of primary and secondary education, and hence the number of graduates meeting minimum admission requirements for higher education; and on increasing the possible avenues by which those who initially fail to gain entry ultimately can pursue post-secondary studies.

lxxxi. Adoption of such a strategy will require a concomitant restructuring of financing of post-secondary education, increasing the share borne by the private sector and individuals. In all countries, those with the highest levels of education tend receive the highest incomes. If many of the most highly educated emigrate to earn even higher incomes, and the gap thus widens between the social and private returns to higher education investment, compelling arguments can be made for ensuring that those who benefit the most from post-secondary and university education bear a substantial portion of the cost. Appropriate loan and scholarship schemes need to be designed to guarantee access for qualified students from low income households.

lxxxii. Meeting educational needs within generally resource constrained Caribbean countries, as elsewhere, requires assessment of trade-offs and setting priorities. The political and cultural desire of governments to provide a balanced and comprehensive range of educational opportunities nationally must be reassessed in light of the often lower costs of shared institutions and/or of educational services purchased externally. As the report highlights, Caribbean middle income developing countries with small populations cannot afford educational self-sufficiency. This underscores the need for greater regional cooperation and coordination of the kind proposed in this report and advocated strongly by OECS, CARICOM, and other regional organizations.

CARIBBEAN EDUCATION ACTION PLAN

MAIN ISSUES	POLICY OPTIONS	COMPLEMENTARY SUPPORT MEASURES
I. PRESCHOOLING		
The expansion of preschool opportunities is needed for the social and cognitive development of children and for increasing children's readiness for primary education.	Promote expansion of preschool enrollments, particularly for disadvantaged children, with private financing by individuals and companies, and where necessary, with targeted public subsidies for the disadvantaged. Priority should be given to four and five year old children.	Make needed investments in preschool facilities, and set minimum physical standards, including for sanitation as a condition for any public or NGO support, and encourage local communities to take responsibility for physical maintenance.
Improvements are needed in basic and in-service preparation of teachers and in the availability of suitable educational materials.	Provide in-service training and other resources such as health and nutrition services for children to support the work of preschool teachers.	Give serious consideration to establishing a Regional Training and Resource Center to offer training to early childhood workers and supervisors, provide external certification of preschool workers, and assess training needs and training resource requirements.
II. PRIMARY EDUCATION		
For most Caribbean countries, the central educational issues at the primary school level are the need to raise the quality of schooling, especially in reading, writing, and numeracy and to increase efficiency in the use of educational resources. Reduce repetition and dropout in some countries.	Standardize the goals, objectives, and systems of primary education in OECS member states including curriculum and subjects taught, textbooks, as well as tests and examinations. Set academic achievement targets for specific grade levels based on the curricula and conduct regular assessments to measure student progress and feed results back to teachers and parents. Maintain standards of instruction time particularly in the core subjects. Establish and maintain minimum physical standards for school facilities and secure at least a common base of instructional resources, such as teacher guides, books, globes, maps, dictionaries, blackboards, and other items, at each school. Ensure that an adequate portion of annual budgets for education is earmarked for this purpose. Develop a textbook policy which ensures all school children have access to a basic set of textbooks through purchase, loans or grant.	Reduce low achievement repetition and dropouts particularly among young males, by (i) developing incentives to encourage more male teachers in primary school, (ii) increasing parental awareness of the need to encourage and support primary schooling of males, (iii) automatically promoting all students in early years and introducing multigrade teaching for children with different achievement levels. Assess the physical conditions of school facilities and the availability of instructional resources and devise plans for (i) upgrading and regularly maintaining facilities with greater community help, and (ii) supplying basic instructional materials for the classrom. Increase the variety of paths for teacher training and offer incentives to encourage teachers to participate in training; develop head teacher training programs; institute regular school-based, in-service teacher training programs, interactive radio instruction, and programmed materials for multigrade classes; standardize the teacher training offered by OECS colleges. Where not already undertaken, compare teacher salaries and conditions with those of similar occupations and develop policies to attract qualified teachers, paying special attention to incentives needed for serving in remote or disadvantaged areas.

CARIBBEAN EDUCATION ACTION PLAN

MAIN ISSUES	POLICY OPTIONS	COMPLEMENTARY SUPPORT MEASURES
III. SECONDARY EDUCATION		
For all countries, the main issues are ensuring high levels of access to a generalized, high-quality secondary education rather than to various forms of post-primary education, and completing the transformation to a system serving all qualified students rather than a privileged few.	Adopt a common core curriculum in the first three years of secondary school based on mathematics, English, science, and social studies, and a senior secondary curriculum for a wide ability range of students leading to a national school-leaving examination and secondary school diploma; alternatively, revise CXC syllabuses to cover the whole ability range of students and introduce a revised uniform grading system.	Boost in-service teacher training programs to both improve teaching and raise morale of teachers. Develop head teacher training programs in management and leadership. Devise measures to attract more and better qualified university graduates into teaching and improve incentives and opportunities for non graduate trained teachers to improve subject knowledge. Further consider ways to reduce teacher turnover.
A second issue is to clarify the appropriate role of secondary schools and the optimum curricular mix between general and vocational skills training, and to increase the cost effectiveness of such training.	Governments considering adopting increasingly diversified curricula in post-primary schools should exercise caution because of the substantially higher cost and limited benefits accruing to students in these programs. Governments already operating such programs should consider concentrating instruction intensively in the final year of secondary schooling or alternatively focus curricula on teaching the principles of science and technology.	Increase the use of distance education where there is limited teaching availability, combining self-study and radio with supervised study in school and community centers. The smaller countries can reduce unit costs by creating large classes, especially in the fourth and fifth years, by streamlining the curriculum, and by reducing the range of options, especially in technical-vocational subjects. A useful measure for containing unit costs is to share technical/vocational facilities among a number of nearby feeder schools.
IV. TERTIARY EDUCATION		
The major issues are to what extent and how to increase the overall comparatively low enrollment rates at this level while maintaining or increasing quality, given the constraints set by government expenditures, small country populations, and often substantial migration.	Increase cooperation between public training institutions and private sector organizations in TVET to increase opportunities for training, and link training to labor market demand and self-employment prospects. Develop an equitable fee structure to cover the operating expenses of public training institutions; loan schemes to help students cover costs; grants and subsidies for disadvantaged groups to ensure equal access; cost sharing of employers and workers for in-service training; and introduce a payroll levy.	Improve in-service training programs for teachers of technical vocational education. Increase the number and types of bridging courses to allow more secondary school leavers to eventually fully participate in tertiary level courses. Develop the legal framework for the governance of tertiary institutions in the OECS to allow greater autonomy, wider national representation, and greater accountability to all stockholders.

CARIBBEAN EDUCATION ACTION PLAN

MAIN ISSUES	POLICY OPTIONS	COMPLEMENTARY SUPPORT MEASURES
IV. TERTIARY EDUCATION (continued)		
	Standardize instruction and competency-based evaluation/certification for technical and vocational education in the OECS; where relevant, these courses should be suitable for validation by UWI or CAST.	Develop some form of tertiary examination council similar to the CXC or non-examining bodies focusing on accreditation and articulation across the region.
	Spcialized single-disciplinary colleges focuse into larger multi-disciplinary institutions particularly in the OECS, thereby also pooling/sharing resources.	Establish an OECS Technial and Vocational Education Training Board to ensure harmonious and integrated development of technical and vocational education within the sub-region.
	Promote private job-related training institutons and in-plant training by a review of taxation, wages and other government policies.	Create an Eastern Caribbean College Council under the aegis of the OECS Secretariat to support proposals for reform of post-secondary education.
V. UNIVERSITY EDUCATION		
The major issues are: (i) the extent to which currently low regional enrollment ratios should increase; (ii) the appropriate relationship between UWI and the regional tertiary institutions; and (iii) the ability to reduce unit costs and diversify sources of finance.	Where relevant, review policies for subsidizing students studying first degree programs in overseas universities, for encouraging UWI campus country nationals to attend their local campus, and for directing non-campus country students to Cave Hill.	Review the UWI financing system, which is believed to contribute to inequalities of access between countries and to the (different levels of government and donor) subsidies between students.
Another issue is attracting and sustaining qualified youth from low-income families in universities.	Consider the feasibility of introducing a longer teaching year and degree programs of shorter duration.	Restructure student loan schemes and reorient donor scholarship programs to encourage at least one year of study at a home country institution (the first) followed by completion of a degree at a university campus.
		Set minimum class sizes and increase the ratio of student to non-academic staff.
		Extend the Challenge program in social sciences to other subjects and for longer time periods, expanding distance education facilities and establishing a center for distance higher education in the OECS for UWI, CAST, and for other appropriate programs.

CARIBBEAN EDUCATION ACTION PLAN

MAIN ISSUES	POLICY OPTIONS	COMPLEMENTARY SUPPORT MEASURES
V. FINANCE		
While most Caribbean governments have maintained the share of education expenditure in the recurrent budget, in many countries, expenditures, overall have has fallen as a share of national income. Capital expenditures have fallen even more severely, to currently low levels, and and are almost totally dependent on concessionary external finance.	Given the current uncertain economic situation, education leaders should design an overall strategy for mobilizing adequate education financing by encompassing both the public and private sectors, including individuals.	Ensure that any savings resulting from a reduction in school-age populations are retained within the sector by reformulating budgetary norms and targeting quality improvements. As a minimum objective, ensure that the share of national income devoted to recurrent education expenditure is at least equal to the share in the early 1980s. Develop sound social and economic arguments to support an increase in the share of public sector investment programs for education. Investigate the potential scope and constraints on private sector institutions and in-plant training programs. Focus on the implications of treating these as "pioneer" industries, with tax and other concessions. At the post-secondary level, devise fee structures and loan schemes that could significantly reduce the government's education expenditure.

CARIBBEAN EDUCATION ACTION PLAN

MAIN ISSUES	POLICY OPTIONS	COMPLEMENTARY SUPPORT MEASURES
VI. MANAGEMENT		
Ministries of Education need to improve their planning and management capacity to enhance efficiency and effectiveness in the use of financial and other resources, and to determine ways to redefine roles and responsibilities so key managers can be freed from routine administrative tasks and allow them to focus more on educational quality and effectiveness.	OECS member countries can gain critical economies of scale in the use of educational resources by adopting common policies for the harmonization of education systems and the pooling of resources in critical educational functions such as curriculum development, testing and evaluation, planning, and research. Governments might benefit by: (i) privatizing some educational services traditionally managed by the state; (ii) decentralizing some traditionally centralized management and monitoring responsibilities; (iii) transferring budgets to schools for such items as procurement of security, maintenance, cleaning services, and transportation under competitive tendering arrangements.	Establish management systems that provide reliable data for planning and monitoring overall performance of the education system, and, in particular, the levels of student achievement in relation to national performance standards, and the destination of secondary school, tertiary college and university graduates in the labor market using tracer studies. Increase the educational research commissioned by ministries to obtain information needed for formulating policy, preparing planning options, and allocating resources. Ministries could co-opt selected teachers for short assignments in planning units; use UWI education faculty and students to carry out operational research; allocate small budgets to planning units for commisioning operational research; and provide incentives and prizes for teachers and principals for exemplary school-based case studies.
Regional cooperation offers potential solutions to, however, problems arising from scarce national resources; but in practice, regional institutions suffer from limited resources, uncertain mandates, and variable government commitments.	Governments should place high priority on strengthening regional policy development within CARICOM and the OECS sub-region, increasing the sustainability of selected regional institutions, and prioritizing areas for regional cooperation, such as maintaining educational standards at all levels.	Establish a regional standing committee for human resource development, with a high degree of autonomy and broadbased regional and national representation; and establish regional councils for accreditation and certification. A priority for regional cooperation is to support the UWI in providing, to the extent feasible, the necessary technology, curriculum materials, and linked accreditation through the network of outreach centers and tertiary institutions, especially in non-campus countries. At the subregional level, OECS governments could consider cooperating in the development of a distance teaching center delivering UWI, CAST, as well as programs of other instituions. Regional institutions such as CXC should introduce measures to contain costs and diversity their sources of finance.
In view of limited aid budgets, and the high proportion of total capital investments that are externally financed, donor activity in education and training will need to be better planned and coordinated, as well as targeted to strengthen those national and regional institutions concerned with policy analysis, design, and implementation.	Education aid should support: policy analysis and planning; operational research into options for containing costs; and means for diversifying finance, ensuring effective maintenance of plant and equipment, assuring supplies of instructional materials, and strengthening management.	Increase the use of country specific donor consortia in education and training and ad hoc meetings of donors to improve aid effectiveness.

CHAPTER I

EDUCATION AND THE EXTERNAL ENVIRONMENT

1.1 The strong commitment of most Caribbean nations to education and training is evidenced in the generally high number of average years of schooling, particularly among English-speaking countries, relative to those of other countries at similar stages of economic development. Caribbean educational systems have been shaped over time within discrete social, political and economic contexts. This evolutionary process will continue, as several of the factors which have importantly influenced the development of education systems to date undergo further change. Among the most crucial factors shaping this process are: (a) demographic trends (including migration) which determine the size both of the age groups for each respective level of education, and of the labor force; (b) the level of economic development, which influences both the availability of resources for the educational system and the distinct, often competing demands for education and training; and (c) the small size of most Caribbean nations and the consequent need to view at least some aspects of educational provision from a regional and, perhaps, extra-regional perspective.

A. Demographic Trends and Migration

1.2 Over the next two decades projected demographic trends in Caribbean countries will present both constraints and opportunities for further human resource development. The size and structure of a country's population, and changes thereto, can have important effects on both the demand for education and training and its supply. First, birth rates and the size of the school age population indicate the potential social demand for school and training places and have implications for particular enrollment ratio targets. For instance, increases in the size of the secondary school age cohort require additional places and teachers be made available just to maintain the current enrollment ratio, whereas reductions in the cohort provide the opportunity to increase the ratio even without any expansion in the number of places available. Similarly, countries with near universal primary schooling and declining school age populations have the opportunity to either shift resources out of the subsector or to enhance quality of education via increased outlays on educational materials and/or provision of more and better trained teachers. Changes in birth rates also imply changes in the average number of children per family and in turn the ability of parents to provide the private finance which all forms of education entail.

1.3 A second aspect of population structure which influences human resource development is the ratio of the school age population relative to the total population, particularly the population of working age. High ratios imply that large amounts of resources have to be provided for these dependent segments of society through incomes of and taxes on a relatively small proportion of the population. The smaller this ratio, the easier it should be to provide, for instance, the resources required for the schooling of each child. The size of the current and projected labor force is also important for considering the outcomes of human resource development and the employment situation facing future school graduates.

1.4 Any discussion of the size, growth and structure of the population in Caribbean societies needs to take into account the relatively high levels of external migration. Rarely over the past several decades have the economies of these nations provided sufficient employment opportunities relative to the size, skill structure and expectations of their domestic labor force. Migration can impact on the demand for and supply of education and training in several ways. Since the majority of migrants tend to be between 16 and 35 years of age, their migration lowers the national birth rate, and consequently reduces the demand and resources required for schooling. Conversely, had the migrants been employed in their home country, they would have created national wealth and tax revenues from which schooling could be financed. Further, the social returns from a given country's educational investment in a person who subsequently migrates are likely to be significantly reduced unless remittances are substantial. Migration also influences the size of the post-secondary school system. On the one hand, the migration of trained labor necessitates a more developed structure for provision of training than is required to fill national labor market demands alone. On the other, some forms of migration are for the explicit purpose of acquiring additional post-secondary education and training. Students may be housed by those members of the family who migrated earlier. Assuming trainees return, such flows and behavior reduce the need for training places in their home countries.

Projections of School Age Groups

1.5 Caribbean countries have undergone major change over recent decades in both the growth rate and demographic structure of their populations. Between 1950 and 1970 crude death rates[1] in the English-speaking countries fell from around 25 to 10 per 1,000 population, while crude birth rates[2] often remained at 40 or more per 1,000 population through the end of the 1960s. As a result, the rate of natural increase[3] actually rose from around 1 percent per annum over the 1920s and 1930s to over 3 percent per annum in the 1960s. Since the 1960s, however, birth rates have fallen in all Caribbean countries, in some cases dramatically. By the end of the 1970s, the average annual rate of natural increase in English-speaking Caribbean countries was 2.2 percent--similar to that of Haiti and below that of the Dominican Republic and Suriname. Estimates for 1988 suggest an overall average annual rate of natural increase of 1.9 percent for English-speaking, and 2.4 percent for other Caribbean countries, as compared to 2.1 percent for all middle-income countries. Because of substantial migration, however, population growth rates[4] have varied, often substantially, from rates of natural increase in many Caribbean countries, as highlighted in Table 1.1. Moreover, as also noted in that Table, over the past thirty years the average annual population growth rate in the English-speaking countries only has been around half that experienced by all middle-income countries.

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[1] Crude death rate is the number of deaths in a given year per 1000 population.

[2] The crude birth rate is the number of births in a given year per 1000 population.

[3] The rate of natural increase is the rate at which a population is increasing or decreasing in a given year due to a surplus or deficit of births over deaths, excluding migration, expressed as a percentage of the existing population.

[4] The population growth rate is the net rate of increase in the size of the total population after the rate of natural increase is adjusted for migration.

Table 1.1: CARIBBEAN - AVERAGE ANNUAL RATES OF GROWTH OF POPULATION AND NATURAL INCREASE, 1960-88 (in percent)

	Population Growth			Natural Increase
Country/Year	1960-69	1970-79	1980-88	1988
Antigua	1.9	1.3	1.5	1.0
Bahamas	4.0	2.4	2.6	2.0
Barbados	0.3	1.0	0.3	0.9
Belize	2.8	1.9	2.9	3.0
Dominica	1.6	0.6	1.4	1.7
Grenada	0.8	-0.4	-0.9	2.2
Guyana	1.7	1.0	-0.1	2.0
Jamaica	1.0	1.3	1.2	2.0
St. Kitts	-1.3	-0.3	-0.2	1.4
St. Lucia	1.6	1.4	2.2	2.1
St. Vincent	0.8	1.3	1.3	2.1
Trinided	1.3	1.4	1.6	1.9
Average for Eng. Speak.	1.4	1.1	1.2	1.9
Dominican Republic	2.7	---	2.4	2.4
Haiti	2.0	---	1.8	2.2
Suriname	---	---	1.8	2.2
All Middle Income Countries	2.4	---	2.2	2.1

Note: The first column of figures for the Dominican Republic, Haiti and All Middle Income countries is for 1965 to 1980.

Source: Bourne (1988) Commonwealth Secretariat (1990a); Caribbean Development Bank (1990a); World Bank (1990a).

1.6 Aggregate demographic data on rates of natural increase and actual population growth, however, are not sufficient for assessing human resource development needs. A prerequisite for such analysis is data on the present and projected size of both school age and working populations, also taking into account anticipated migration. For all Caribbean countries, crude birth rates over the 1960 through 1980s period have declined significantly, as revealed in Table 1.2. For English-speaking countries, the average rate has fallen from 40 to 25, a level substantially below the average (31) for all lower middle income countries with populations less than 5 million. The average for non-English speaking countries has fallen from 46 to 33. Apart from the significantly lower birth rates in Antigua and Barbados, and the high one in Belize, the CBRs of all other Caribbean countries are now close to the averages for their respective grouping within the Caribbean. The decline in CBRs, however, has slowed since 1980. Only in Barbados and Dominica have CBRs fallen more than 3 percentage points since 1980. In fact, as Guengant (1985) points out, the large number of females now entering the reproductive age group, the result of high birth rates throughout the 1960s and 1970s, will exert a powerful upward pressure on crude birth rates in some countries through the end of this century.

Table 1.2: CARIBBEAN - CRUDE BIRTH RATES, 1960-80s
(per 000 population)

Country/Year	1960	1970	1980	Most Recent Estimate
Antigua	33	25	17	15
Bahamas	29	25	25	25
Barbados	30	23	23	17
Belize	44	40	39	37
Dominica	44	39	36	22
Dominican Rep.	47	46	33	31
Grenada	46	30	24	30
Guyana	42	37	30	27
Haiti	46	43	41	35
Jamaica	38	36	29	26
St. Kitts	44	30	26	24
St. Lucia	45	42	28	28
St. Vincent	49	39	29	27
Suriname	44	41	31	32
Trinidad	37	28	29	26
Av. Eng.speaking	40	33	28	25
Av. Non Eng.speaking	46	43	34	33

Source: Guengant (1985) Commonwealth Secretariat (1990a).

1.7 Projections of total population growth as well as age-specific cohorts of the Caribbean countries form an integral part of a world-wide exercise by the World Bank summarized in Bulatao, Bos, Stephens and Vu (1990). These projections for the years 1990, 2000 and 2010 with regard to the 5-14 and 15-19 year age groups are provided in Table 1.3. The projections include assumptions regarding migration and are particularly useful in highlighting the sizeable time lags between reductions in the crude birth rate and any consequent reductions in the absolute sizes of age-specific cohorts.

Table 1.3: CARIBBEAN - PROJECTIONS OF THE 5-14 AND 15-19 YEAR AGE GROUPS 1985, 1990, 2000, AND 2010 (in 000 population)

	5-14 Years				15-19 Years			
	1985	1990	2000	2010	1985	1990	2000	2010
Antigua	24	24	14	20	8	12	12	6
Bahamas	60	55	60	59	28	32	27	30
Barbados	47	42	39	35	26	26	20	18
Belize	54	49	64	74	22	24	22	34
Dominica	21	25	16	17	7	9	14	8
Dominican Rep.	1616	1724	1905	1824	751	775	886	936
Grenada	20	24	28	24	14	10	14	14
Guyana	188	189	160	114	86	84	84	65
Haiti	1516	1594	1871	2073	665	712	800	978
Jamaica	550	558	546	457	290	270	257	256
St. Kitts	12	9	8	8	6	5	4	3
St. Lucia	44	41	38	39	16	22	18	19
St. Vincent	30	31	27	27	14	14	14	13
Suriname	94	94	128	118	51	50	52	65
Trinidad	249	265	288	241	122	120	129	133

Source: Bulatao *et al.* (1990).

1.8 For the 5-14 year age group, which roughly corresponds to the primary and junior secondary school years, several patterns are evident. Examining the absolute numbers in Table 1.3, the following pattern of change in this school age cohort emerges, with ↓ indicating that the number of children will decrease, → that it will remain constant, and ↑ that it will increase:

	1985-2000	2000-2010
Belize, Haiti	↑	↑
Dom.Rep., Grenada, Trinidad, Suriname	↑	↓
Bahamas	→	→
Antigua, Dominica	↓	↑
St. Kitts, St. Lucia, St. Vincent	↓	→
Barbados, Guyana, Jamaica	↓	↓

1.9 Overall, between 1985-2000 absolute increases in the 5-14 years age group are projected to occur in only six of the fifteen Caribbean countries. Only three of these six countries are among the twelve English speaking ones. Further, only in Haiti and Belize are increases in this age group projected across both the 1985-2000 and 2000-2010 periods. And only in these latter two countries, Suriname and the Dominican Republic will the 5-14 age group be significantly larger in 2010 than in 1985. Since most of the other countries are already approaching universal primary schooling, reductions in primary enrollment levels are likely over the next two decades, thus permitting resources to be shifted out of the sub-sector or be re-directed toward interventions to improve quality.

1.10 The 15-19 years cohort approximates the age group of senior secondary and, non-university, tertiary education students. Among this cohort, projected patterns of growth are more varied than for the 5-14 age group, as illustrated below.

	1985-2000	2000-2010
Dominican Rep., Haiti, Trinidad	↑	↑
St. Lucia	↑	→
Antigua, Dominica	↑	↓
Bahamas, Belize, Suriname	→	↑
Grenada, St. Vincent	→	→
Guyana	→	↓
Jamaica	↓	→
Barbados, St. Kitts	↓	↓

1.11 As is the case among 5-14 year olds, in six of the fifteen Caribbean countries, the number of youth 15-19 years of age is projected to increase between 1985 and 2000. A further expansion to the year 2010 is projected in the Dominican Republic, Haiti, Trinidad, the Bahamas, Belize and Suriname. Among half of the twelve English-speaking countries, including Jamaica, Guyana and Barbados, the 15-19 age group is not expected to increase in either time period; and over the entire 1985-2010 period, increases in this cohort are expected only in Belize and Trinidad, the latter of which will be relatively small. Conversely, in each of the non-English-speaking countries, the number of youth 15-19 years of age is projected to increase substantially. As discussed in Chapters VI and VII of this report, present enrollment ratios at senior secondary, tertiary and higher education levels throughout the Caribbean Region are not particularly high in comparison with countries in other regions of the world. Moreover, the anticipated reductions in the size of the 15-19 years cohort in English-speaking Caribbean countries will not be as substantial as those in the 5-14 year age group, nor are education and training at this level universal or matching social demand. Nevertheless, projected decreases in this age group could catalyze debate around the issues of appropriate resourcing and potential tradeoffs between increased access and enhanced quality. In the non-English-speaking Caribbean, however, social demand to increase the number of senior secondary, tertiary, and higher education places is likely to intensify.

Labor Force Projections and Unemployment

1.12 While the total school age population is expected to decline over the next two decades in many Caribbean countries, particularly the English-speaking ones, throughout the Region the size of the working age population, i.e., those 20-64 years old, is projected to increase, as revealed in Table 1.4. Anticipated median increases over the 1985 to 2010 period are 76 percent for English-speaking countries and 92 percent for non-English-speaking countries. Even taking into account anticipated high continuing rates of migration, the number of 20-64 year olds in English speaking countries is expected to increase from 2.6 million in 1985 to 4.1 million in 2010, an increase of 58 percent. In non-English-speaking countries, between 1985 and 2010 this population group is expected to increase from 5.7 million to 10.6 million persons, or by 84 percent. Countries with the most rapid projected increases over this period are: Belize (143 percent), St. Lucia (124 percent), Suriname (94 percent), Grenada (93 percent), Dominican Republic (78 percent), Antigua (127 percent), and the Bahamas (96 percent). Projections for the latter two countries include substantial immigration. In Trinidad, a 56 percent increase is expected. Those countries with the smallest projected increases are Guyana (17 percent) and Barbados (19 percent), while in St. Kitts the working age group is expected to decrease by 5 percent, reflecting as in the case of Guyana anticipated large emigration.

1.13 The very distinct patterns emerging from projections for the 5-19 and 20-64 year age groups, coupled with earlier data on trends in crude birth rates, vividly demonstrate the slow but powerful impact on demographic structure of changes in birth and death rates. Indeed, by the second decade of the next century, the number of elderly will begin to increase substantially, the product of high birth rates in the Caribbean over the 1950s and 1960s.

Table 1.4: CARIBBEAN - PROJECTIONS OF 20-54 YEARS AGE GROUP 1985, 2000 AND 2010 (in 000s)

Country/Year	1985	2000	2010	Percent Increase 2000/1985	Percent Increase 2010/1985
Antigua	30	57	88	90	127
Bahamas	106	174	208	62	96
Barbados	136	158	162	16	19
Belize	60	118	146	97	143
Dominica	34	45	61	26	79
Dominican Rep.	2912	4422	5581	52	92
Grenada	43	67	83	56	93
Guyana	379	411	445	6	17
Haiti	2651	3774	4657	42	76
Jamaica	1049	1304	1711	24	63
St. Kitts	20	17	19	-15	-5
St. Lucia	50	89	112	98	124
St. Vincent	56	80	98	43	75
Suriname	181	281	352	55	94
Trinidad	607	804	948	32	56

Source: Bulatao et al. (1990).

1.14 One important measure commonly computed from the demographic structure of a given country is the ratio of young and old persons to the population of working age, the so-called "dependency" ratio. The smaller that ratio, the less the "burden" on the working population. Conversely, a high ratio implies that a relatively small proportion of the population will have to generate the resources needed to provide relatively large amounts of basic services, including health and education, to a large share of the population. Table 1.5 presents the actual dependency ratios of Caribbean countries for 1960 and 1980 together with projections of this ratio for the years 2000 and 2010. The average ratios for the nine countries for which data are available were 0.96 for 1960 and 0.84 for 1980. The average dependency ratios in the Caribbean Region are projected to decline to 0.62 by the year 2000 and to 0.45 by the year 2010. Notably, by the next century only Belize and Haiti will continue to have high dependency ratios compared to the regional average. With substantial increases in the age group 65 years and older expected to begin around 2010, dependency ratios are likely to increase somewhat after that date. Thus, the relatively low dependency ratio expected over the two decades presents an important window of opportunity for Caribbean nations to increase the provision and quality of social services in general, and education in particular, to their population.

Table 1.5: CARIBBEAN - DEPENDENCY RATIOS, SELECTED YEARS 1960-2010

Country/Year	1960	1980	2000	2010
Antigua	n.a.	n.a	0.45	0.52
Bahamas	0.92	0.72	0.54	0.47
Barbados	0.78	0.67	0.47	0.47
Belize	n.a.	n.a.	0.75	0.69
Dominica	1.00	0.92	0.54	0.47
Dominican Rep.	n.a.	n.a.	0.61	0.49
Grenada	1.13	0.85	0.54	0.45
Guyana	n.a.	n.a.	0.54	0.45
Haiti	n.a	n.a.	0.72	0.61
Jamaica	0.96	0.79	0.69	0.45
St. Kitts	1.04	0.89	0.72	0.52
St. Lucia	0.96	0.96	0.64	0.54
St. Vincent	1.12	1.00	0.51	0.45
Suriname	n.a.	n.a.	0.64	0.49
Trinidad	0.85	0.67	0.51	0.45

Source: Bourne (1988) for 1960 and 1980; Bulatao et al. (1990) for 2000 and 2010.

1.15 While declining dependency ratios reduce the burden on the working population to support the non-working population, they concomitantly present challenges to provide sufficient employment opportunities for the growing labor force. Estimated unemployment rates in the Caribbean during select years of the past decade are presented in Table 1.6. Since the beginning of the 1980s, the only country in which unemployment rates seem to have decreased is Jamaica, in which the 1980 rate was exceptionally high for the Region. The employment situation has deteriorated considerably in Haiti, Trinidad, St. Vincent, Grenada, Barbados, the Dominican Republic and Suriname. At the same time, labor shortages are reported to exist in St. Kitts, while immigration has increased into both Antigua and the Bahamas. Without pre-empting the later discussion on economic prospects for the Caribbean Region, the current generally high unemployment rates are of considerable concern, particularly in light of the projected large increases in the working age population over the next two decades.

Table 1.6: CARIBBEAN - UNEMPLOYMENT RATES 1980 AND 1987-89
(percent)

Country/Year	1980-82	1985	1987-89	Female/Male Ratio
Antigua	21	21	n.a	n.a
Bahamas	n.a	12	12	1.55
Barbados	11	19	19	1.89
Belize	14	15	15	n.a
Dominica	19	n.a	n.a	1.40
Dominican Rep.	18	n.a	25 (1986)	n.a
Grenada	18	20	28	1.31
Haiti	10	n.a	30	n.a
Jamaica	27	25	18	2.25
St. Kitts	12	n.a	n.a	1.50
St. Lucia	19	n.a	20	1.44
St. Vincent	20	n.a	32	1.22
Suriname	5	n.a	33	n.a
Trinidad	10	17	22	1.33

Source: Bourne (1990); Planning Institute of Jamaica (1990); CDB (1990); Grenada: Ministry of Finance (1988); OECS/EEC (1988); Fergus (1990a); World Bank (1988a) (1989b) (1990b).

1.16 Disaggregating the overall unemployment rates in Table 1.6 by gender and age group, important variations occur. Examining data for nine countries around 1980, as highlighted in that Table, female unemployment is consistently higher than male, with the average ratio being 1.65:1. More recent data for Jamaica indicate an average unemployment rate for females over the 1980 to 1988 of 36 percent compared to 15 percent among males. A similar situation exists in Grenada where 34 percent of females and 18 percent of males within the working age group are seeking work. A slightly different situation appears to exist in Trinidad where unemployment rates increased between 1982 and 1989 from 8 percent to 21 percent for males and from 14 to 25 percent for females.

1.17 Unemployment rates are also higher for younger people. In Trinidad in 1990 the overall open unemployment rate was 22 percent, while that for the 15-24 years age group was 40 percent. Among the 15-24 year olds not in school, only 41 percent had jobs. In Grenada, 54 percent of the 15-19 year olds not in school are job seekers as are 36 percent of the 20-24 year olds. Unemployment data for Jamaica over the 1984 to 1988 period, combining both the gender and age variables, reveals that while unemployment rates having declined among females and youth, they remained high.

Table 1.7: JAMAICA - UNEMPLOYMENT RATES BY SELECTED AGE GROUPS AND GENDER, 1984-88 (in percent)

	14-19		20-24		25-34	
Year/Age	M	F	M	F	M	F
1984	38	79	28	59	12	36
1985	35	74	24	59	12	33
1986	39	74	25	56	14	35
1987	32	68	22	50	11	31
1988	31	62	21	42	10	27

Source: Levitt (1990).

1.18 More recent estimates for Jamaica indicate that in October 1989 the percentage of unemployed, by gender and age group, was:

Men under 25 years	19.8
Men aged 25 years and over	5.0
Women under 25 years	47.1
Women aged 25 years and over	15.9
Overall unemployment rate	16.8

1.19 These figures notwithstanding, the difficulty of accurately interpreting unemployment statistics must be underscored. In fact, some of the "unemployed" may only be willing to accept certain types of jobs, while others may not be interested in obtaining employment, or actually may be "employed" in the informal sector, which jobs are not officially reported. Moreover, in countries with generally poor labor market conditions, as is the case in several Caribbean nations, many persons may be discouraged from even considering themselves as part of the labor force, yet would be willing to work if jobs were available. Hence, the overall statistics presented above must be regarded only as indicative of the rates of unemployment. Undoubtedly, however, for numerous reasons, high percentages of young people across the Caribbean, particularly females, are not fully utilized in the labor force.

Emigration

1.20 High levels of unemployment in the Caribbean long have catalyzed external migration, with large scale emigration dating back a century or more. Many of these early movements of labor, however, were temporary, linked to specific large construction projects. Since the demographic explosion commenced in the late 1950s, however, more constant and permanent emigration has occurred. Between 1950 and 1980 Guengant (1990) estimates that emigration from the English speaking countries was almost 1.5 million, including some 300,000 persons in the 1950s and 600,000 in each of the following two decades. This emigration significantly held down population growth rates. Between 1970 and 1980, for instance, while the rate of natural increase among English-speaking countries was around 2.2 percent a year, as a result of emigration annual population growth rates in these countries averaged only one percent. With the notable exception of The Bahamas, which experienced considerable immigration, over the decade of the 1970s Caribbean countries registered emigration levels at least half the rate of their natural increase.

1.21 Across the whole of the Caribbean about four million people migrated between 1950 and 1980. This represented around 20 percent of all voluntary migration worldwide, as well as the highest proportion of migration of any area of the world (Segal, 1986). The cumulative impact of this large-scale migration is striking. For example, the number of Haitians presently living in the United States is estimated to be between 10 and 15 percent of the total Haitian population. As many Barbadians are said to now live in New York as in Barbados. Some 22,000 persons originally from the island of Carricou, which now has a population of 6,000, were living abroad in 1970. And although the 1980 United States Census indicated 200,000 citizens of Jamaican origin, the current number of residents originally from Jamaica, including illegal entrants, has been estimated at almost 500,000 (Foner quoted in Anderson, 1988a).

1.22 Over the past thirty years Caribbean migrants predominantly have moved to the United States and Canada. In 1989, for example, 82 percent of all Jamaican migration was to the United States, 17 percent to Canada and one percent to the United Kingdom. Table 1.8 presents data on the levels of Caribbean migration to the United States during the 1980s and relates these to levels of population in their home countries. Notably, over the 1980 to 1988 period, these flows were equal to 10 percent or more of the population in Antigua, Grenada, Guyana and St. Kitts.

1.23 Dividing the Caribbean into English- and non-English-speaking countries, aggregate levels of immigration into the United States during the 1980s were:

	1980	1984	1987
All Caribbean	67,743	74,231	86,721
English-speaking	43,958	41,245	45,544
Non-English-speaking	23,785	32,986	41,177

Whereas over the 1980s immigration from the English-speaking countries remained essentially constant, flows from the Dominican Republic rose from 17,000 to 25,000 and from Haiti rose from 6,000 to 15,000.

Table 1.8: CARIBBEAN - POPULATION AND MIGRANT FLOWS TO THE UNITED STATES 1980-88

Country/Year	Migrants 1980-87 (1)	Migrants 1988 (2)	Population 1985 (000s) (3)	(1) + (2) 1000 pop.
Antigua	10,739	837	80	14
Bahamas	4,333	1,283	232	2
Barbados	15,333	1,455	253	7
Belize	11,609	1.497	166	8
Dominica	4,968	611	78	7
Dominican Rep.	172,941	27,189	6,416	3
Grenada	8,595	842	96	10
Guyana	72,857	8,747	790	10
Haiti	77,915	14,819	5,922	2
Jamaica	162,273	20,966	2,336	8
St. Kitts	9,132	660	44	22
St. Lucia	5,155	606	137	4
St. Vincent	5,817	634	117	6
Trinidad	28,606	3,947	1,185	3

Note: The figure for Haiti relates to 1987 since there was a large adjustment in 1988 for refugees and those seeking asylum.

Source: United States Department of Justice (1990).

1.24 Of special importance from a human resource development perspective are the characteristics of the migrants. Taking Jamaican migrants as an example, 40 percent are below the age of 20 years, and just 47 percent are classified as workers. Of these worker-migrants, around one-third are craftsmen and operatives and one-fifth fall into the professional and managerial categories. While the numbers of migrants, and particularly worker migrants, in any one year may appear to be small compared to the total population, their cumulative effect is substantial. First, as earlier noted, emigration has reduced the rate of population growth in many Caribbean nations to one-half its natural rate, with all its ensuing implications. Second, emigration rates are very high for particular occupations such as nursing, which ultimately adversely affect the capacity of service delivery systems within the migrant's country to operate effectively.

1.25 Moreover, the level of emigration of professional, technical and skilled workers represents a high proportion of national training institutions' output. Over the period 1978 to 1985, for example, Jamaica experienced a net loss of 306 doctors, or 78 percent of the medical training output over these years (Anderson, 1988b). More generally, a survey of post-secondary training institutes in Jamaica showed that by 1982, over half of the 1977 to 1980 graduates had migrated (Murray, 1982). Over the more recent 1980-86 period, while 67,632 persons graduated from Jamaican training institutions, 36,180 persons with corresponding skills emigrated (Planning Institute of Jamaica, no date). Similarly, "whereas in general, five Grenadians must be sent to the University of the West Indies to get one back: to obtain one doctor through that institution 22 must be trained" (Marshall, 1985). And for the OECS, Simmons and Plaza (1991) reveal that at the beginning of the 1980s, males with some university studies were five times as likely to migrate to Canada as the male population as a whole. While all these figures show gross levels of migration and do not take into account those returning, migration is a significant phenomenon across the Region, particularly among those with higher levels of education.

1.26 The level of migration, particularly of trained workers, brings into question the appropriate size of the post-secondary school education and training system. Although absolute shortages exist in a few occupations such as nurses and doctors, in many fields the level of graduates appear to be substantially greater than are being effectively demanded in the respective economies. Whether emigration is caused by inadequate effective demand for such labor or by earnings differentials between countries, it is clear that many countries are not reaping the full benefits of their social investment in education. The large percentage of migrants who are dependents also suggests that whole families are emigrating and that remittances may not be offsetting those losses to any great extent. In this context, the issue of who should finance post-secondary studies becomes particularly important, as discussed in detail in Chapters II, VI and VII.

1.27 Where migration is motivated by the desire to obtain further education and training, it can generate positive economic returns for the home country, assuming the migrant returns. While almost 30,000 workers migrated to the United States in 1988 from English speaking Caribbean countries, 12,500 students also entered. For Dominica and Trinidad, students outnumbered those who migrated for work. The importance of overseas education and training will be discussed in later chapters in the context of defining an appropriate size and structure of the post-secondary education and training system in the Caribbean.

B. Economic Performance and Fiscal Austerity

1.28 While analysis of demographic trends in the Caribbean provides important insights on the broad magnitudes of individual demand for schooling and training, human resource development also must be viewed from the perspective of the current and projected economic situation in the Region. Notably, the rate of economic growth will influence not only public and private resource availability for the provision of education and training but also, together with the structure of growth, will determine the level and mix of demand for educated and trained labor. While it is never possible to forecast accurately future labor market demands across all occupations and determine what these would imply for an optimally structured education system, some general considerations remain useful. A major strategic choice exists between organizing secondary and post- secondary education to produce people with specific skills ready to enter specific occupations or to provide broad-based competencies which can be further oriented and developed over the course of one's working life. Certainly, it is possible and useful to roughly determine some of the labor demands which will result from any economic strategy and set of policies. However, the more uncertain the external economic environment and the greater the reliance on market forces to determine the rate and structure of economic growth, the more appropriate a broad-based education and training system is likely to be, as discussed in later Chapters of this report.

1.29 This section is divided into three parts: (i) a brief synopsis of the economic performance of Caribbean countries in the 1980s; (ii) a review of the effects on the education systems of this economic situation and the structural adjustment policies which many countries introduced over this period; and (iii) a discussion of likely future economic scenarios and the implications of these for both the production and utilization of educated and trained labor.

Recent Economic Performance

1.30 Among the 15 Caribbean countries included within this study, economic structures differ considerably, as reflected in the basic economic indicators presented in Table 1.9. These economies, nevertheless, share several important characteristics. First, virtually all have very open economies, with the ratio of exports of goods and non-factor services to GDP above 60 percent in five countries, between 40 and 59 percent in seven others, and less than 40 percent in the remaining three.

Table 1.9: CARIBBEAN - BASIC ECONOMIC INDICATORS

Country	GNP per capita 1990 US$	Real Growth Rate of GNP Per Capita 1980-90	Exports as (good & nfs) as % of GDP 1990	Distrib. of GDP (at factor cost)		
				Agric. 1990	Manuf. 1990	Serv. 1988
Antigua	4600	4.7	87	4	3	93
Dominica	1940	3.0	54	26	7	67
Grenada	2120	5.1	58	17	5	78
St. Kitts	3330	6.0	50	9	14	77
St. Lucia	1900	4.2	77	14	7	79
St. Vincent	1610	5.7	63	19	9	59
Bahamas a/	11,510	1.7	83 a/	4 a/	20 a/	69 a/
Barbados	6540	1.4	51 b/	5 b/	8 b/	87 b/
Belize	1970	2.5	56	22	10	68
Guyana	370	-3.2	78	38	10	52
Jamaica	1510	-0.4	59	5	20	75
Trinidad	3470	-6.0	46	2	9	89
Dominican Rep.	820	-0.4	27	19	14	67
Haiti c/ d/	370	-2.3	12	35 d/	17 d/	48 e/
Suriname e/	3050	-5.0	34	12	15	62

a/ 1988
b/ 1989
c/ FY except GNP per capita and Real Growth Rate of GNP per capita.
d/ Sectors at real prices.
e/ 1988

Source: World Bank Economic Memoranda.

1.31 Second, in the 15 Caribbean countries included in this study, "services" represent the largest sector of the economy, averaging 70 percent. The share of manufacturing in GDP exceeds 15 percent only in one non-English-speaking country, Jamaica, and The Bahamas. Agriculture appears to be of importance only in the OECS countries (except Antigua), Belize, Guyana, Haiti and the Dominican Republic. The increase in the share of the service sector in many Caribbean countries over the 1980s is attributable predominantly to strong growth in tourism.

1.32 During the 1970s, almost all Caribbean countries experienced per capita income growth. The major exceptions were Jamaica, where per capita income fell substantially, and Dominica and St. Vincent where income remained stationary. The strongest economic growth during this decade was in Trinidad, St. Lucia and the Dominican Republic. The inflow of substantial external financing plus favorable terms of trade for some key export commodities were major contributing factors to such growth.

1.33 After 1980, different growth patterns developed between the distinct Caribbean country groupings, as documented in Table 1.9. Over the 1980s, all OECS countries constantly managed to maintain positive per capita income growth, averaging 4.8 percent per annum between 1980 and 1990. Generally low indebtedness, continued flows of concessionary external finance, conservative fiscal and monetary policies, and relatively high world prices for bananas provided favorable conditions for growth, particularly in tourism and construction.

1.34 All of the other English-speaking countries, with the exception of The Bahamas, suffered declines in per capita income over the period 1980 to 1985 largely due to falling export prices for oil, bauxite and sugar, and reduced external capital flows towards the end of the period. On average, incomes fell by 3.8 percent a year. Since 1985, the situation has slightly improved for all English-speaking countries except Trinidad, which has experienced negative per capita income growth in every year since 1982. The improvements in the economic situation notwithstanding, only in Belize and The Bahamas are positive per capita growth rates being sustained. Guyana and Jamaica still experience negative or minimal growth.

1.35 On the whole, the three non-English-speaking countries have fared poorly. Between 1982 and 1986 per capita income in the Dominican Republic fell from US$1,330 to US$730, with rapid growth in 1987 followed by decline again. In Haiti the economic situation has been even worse. In no year since 1980 has per capita income increased. And with the exception of 1981, the same is true for Suriname which has experienced the highest negative growth rates in the whole Region.

1.36 In summary, apart from the small OECS countries, only in Barbados, the Bahamas and Belize (the three countries with the smallest populations) were per capita incomes maintained through the 1980s. Of the total population of the Region, only five percent resided in countries which did not record declines in per capita income. If only the English-speaking countries are included, this figure increases to about 20 percent. In both sets of countries, substantial external resource flows played an important role in sustaining public investment. For example, in the OECS countries, grants and external public sector borrowing averaged 79 percent of total public sector investment between 1977 and 1987. In Jamaica where incomes fell, foreign grants and loans averaged 73 percent of Government capital expenditures over the period 1986 to 1990. One consequence of this has been the gradual (and in some cases not so gradual) build up of the external debt to GDP ratio. External debt indicators for 1986 and 1990 are provided in Table 1.10.

Table 1.10: CARIBBEAN - EXTERNAL DEBT INDICATORS

Country/Debt Level	Debt US$m. 1990	Debt as % of GDP 1986	Debt as % of GDP 1990
Antigua	319	75	78
Dominica	83	48	49
Grenada	91	42	45
St. Kitts	43	36	28
St. Lucia	60	10	16
St. Vincent	59	25	28
Bahamas a/	147	6	6
Barbados b/	506	35	30
Belize	136	45	36
Guyana c/	1864	166	739
Jamaica	4367	165	110
Trinidad	1808	39	36
Dominican Rep.	4408	68	60
Haiti	844	---	32
Suriname a/	161	---	15

a/ 1988
b/ 1989 - Medium and Long Term Debt
c/ Medium and Long Term Debt

Source: World Bank (1990c); Commonwealth Secretariat (1990a), plus World Bank estimates for Haiti, Suriname and Dominican Republic.

1.37 As Table 1.10 reveals, Guyana and Jamaica are the most highly indebted Caribbean nations, with 1990 external debt representing 739 percent and 110 percent of GDP, respectively. The debt situation in the three non-English-speaking countries varied in 1990 from a relatively high debt to GDP ratio in the Dominican Republic (60 percent) to a relatively low ones in Haiti (32 percent) and Suriname (15 percent). The low rates in the latter country, however, may more accurately reflect the creditworthiness considerations than particularly cautious approaches to borrowing.

1.38 In fact, apart from most of the OECS countries, there was a general build-up of debt through the 1980s as interest rates increased and current account and budget deficits continued. At the same time new external capital flows to the Region fell considerably, from US$816 million in 1986 to US$530 million in 1990. These trends are likely to continue during the 1990s and the fiscal constraint on both current and capital expenditures is likely to remain tight.

1.39 At the end of the 1980s, a number of Caribbean countries were characterized by declining per capita incomes and increasing external debt obligations. The following section briefly discusses the effects of this situation, and of the adjustment policies which are being implemented to reverse it, on human resource development.

Economic Recession and Education

1.40 Chapter II provides a detailed account of the levels and trends through the 1980s of public expenditures on education in the Caribbean. One important conclusion is that in only four of the thirteen countries for which data were unavailable were recurrent expenditures on education maintained or increased as a share of GNP between 1984 and 1988, in two of which countries, GNP itself was falling. In several other countries both GNP and the share of education expenditure decreased. Given the increases in enrollments over this period, expenditures per pupil have fallen substantially in many countries.

1.41 Reduced levels of funding have constrained educational provision in several ways. Most obvious are the lack of teaching materials of all kinds and reduced school maintenance. Less obvious, but nevertheless important, are reduced levels of supervision and in-service teacher training. In most countries that suffered from a lack of income growth and reduced government expenditure, substantial reductions occurred in real wage levels, particularly in the public service including the teaching force. This had led to low morale, the taking of second jobs, and ultimately resignations. Teacher attrition rates are currently very high in Guyana and are a problem elsewhere. Even when replacements are made, the new teachers are always less experienced and often less committed.

1.42 In addition to the reductions in government expenditure resulting from lower income levels, debt repayments, and/or from policies aimed at reducing government deficits, other aspects of attempts to control economic decline also affect the education sector. One example is currency depreciation. Over the past decade substantial depreciations have occurred in Jamaica, Guyana, Trinidad and the Dominican Republic. In addition to further reducing teachers' real incomes and encouraging emigration, currency depreciation substantially increases the costs of imported inputs such as paper, secondary school books, science materials and equipment and building materials. This has adversely affected particularly the higher education levels, where the import content can be expected to be greater.

1.43 All levels of education involve costs to students or parents. Writing materials and textbooks at secondary school and above, and sometimes at primary school, invariably have to be provided by the home. Uniforms, transportation costs and a variety of charges for sports and crafts also have to be borne. Where devaluation has occurred, all these costs have increased at a time when in most countries public expenditures have declined, thus resulting in more financial responsibilities having to be passed on. Adjustment policies affect the incomes of various segments of the population differently. However, in the often lengthy period before any generalized recovery occurs, low income groups are most likely to be adversely affected. A combination of slow economic growth and the necessary shift in resource use from consumption to investment results in further decreases in real incomes for large segments of the population. Any significant increases in the private funding of education in this context will require innovative schemes and a substantial change in attitudes towards the issue of the appropriate relative responsibility of government and individuals in the funding each level of education and training. Currently, both face financial constraints.

The Economic Future

1.44 Adjustment policies are designed to reverse unsustainable domestic and external imbalances and eliminate structural impediments to growth. In restoring and retaining macroeconomic balance, all countries will be faced with the necessity of making their economies more able to deal with external shocks in the future, and of increasing growth to levels that would permit increasing consumption and investment opportunities. The major common feature of the Caribbean economies was shown above to be their relatively high degree of openness and dependence on foreign trade in both goods and services. Any attempt to discuss the future of education and training systems requires a hard look at the economic and trading context within which they will develop, since it will affect both their funding and societies use of their outputs.

1.45 The recent response in most Caribbean countries to the economic difficulties of the early and mid-1980s has been to adopt measures which promote trade liberalization and to encourage greater competition. These policies have now to be seen in the context of uncertainties in maintaining trading preference which were accorded in the past to several of the Region's exports. Apart from tourism, further expansion of foreign earnings is largely conditional upon developing non-traditional exports of goods and services on a competitive basis. While by no means a panacea nor sufficient in itself, the prerequisite for such growth is the adoption of a liberalized and non-distorted trade regime which takes advantage of relatively low air transport costs to large markets in North America and Europe.

1.46 The removal of barriers to competition and trade can have important effects on employment. First, the demand for different skills will change. Second, a more competitive environment and one which encourages non-traditional exports will make future demands for different types of labor more difficult to foresee. A more competitive economic environment is a more uncertain one. Because competitive economies are particularly sensitive and vulnerable to changes in demand, less job security may result. Although the expectation is that more competition will in the medium- and long-term lead to more employment throughout the economy, there may be a constant shifting in the demand for labor from one sector to another. As industries come and go, so too will the demand for specific skills associated with them. Consequently, over a range of activities it becomes very difficult to foresee which skills will be needed in the future and for how long. The flexibility of the work force, with regard to both skills and mobility, will determine how quickly absorption into new sectors will occur.

1.47 Education and training systems are not the major determinant of levels of employment of school graduates. If a demand for labor exists, however, they can increase placement levels and occupational mobility by providing graduates with the types of work-related and job-search skills that allow them to move quickly and productively into newly competitive sectors. The provision of such skills together with the ability to quickly enhance them will need to be major aims of education and training institutions in the Caribbean.

C. Small Country Dimensions and the Regional Perspective

1.48 Both demographic and economic factors set a context for human resource development among Caribbean countries. Another major factor which influences the operations and many of the decisions which have to be made in the sector is the small population of most states (Commonwealth Secretariat 1987). In addition to the Dominican Republic and Haiti, the only countries which have a population over 250,000 are Jamaica (2.4 million), Trinidad (1.3 million) and Guyana (0.8 million). The most heavily populated of the OECS countries, St. Lucia, has 150,000 persons and many of the British dependent territories have less than 20,000. A number of constraints, challenges and opportunities result from this situation. Two main issues which arise from this setting are the administrative overload on senior public education officials and on the how best to optimize the mix of national, regional and extra-regional educational institutions and processes.

Administrative Overload

1.49 No matter what the size of their population, all nation states share the necessity for administration and decisionmaking across many common areas. For instance, at the macroeconomic level a small country has to manage its exchange rate, interest rate, money supply and tax rates in much the same way as do larger countries. Similarly in education there are curricula to devise, examinations to set and administer, pupil teacher ratios to determine, courses to establish and curtail, places to ration and so on. However, in small countries, while the amount of decisionmaking may be similar, the number of decisionmakers is fewer. As a result, administrators may become overloaded, a situation which tends to be intensified when, as is common in small countries, the turnover of senior staff is rapid.

1.50 Often increasing the problem of administrators taking on multiple tasks is a lack of timely, relevant information, again resulting from scarce administrative resources. One particular area where this commonly occurs is the labor market (Packer, 1989). Consequently, there is little guidance for planning the development of programs at the senior secondary and, particularly, tertiary levels of the education and training system. The problem is compounded due to economic volatility. One or two large employers entering or exiting from the economy can have a major impact on the demand for specific skills. Equally, demands will be lumpy. A major resort development will require large numbers of various types of craft persons in the establishment phase followed by only a small demand to meet future maintenance needs. Planning post-secondary education and skills development courses in this context requires rather different considerations and perspectives than would be the case in larger economies. Flexibility of training institutions becomes paramount. It cannot be presumed that graduates will be able to utilize one specific skill area. Emigration, which has been particularly high from the small island economies, also complicates planning. It presents the important question of how best to develop national training systems. According to the labor market demands of the local economy, or those of the wider world economy as interpreted by individual students? The decision can have important implications for how the education and training system is to be financed.

1.51 Another area in which there is often administrative overload is in governments' dealings with development assistance agencies. Small states tend to receive higher levels of aid per capita than larger states. Aid is received from a multiplicity of sources and takes many forms. Small states often face the task of developing projects with a number of components funded by different agencies with different procedures and reporting requirements. When this is combined with agencies which require the same amount of information as they would from a larger country, the consumption of local administrators' time is great. Aid agencies have their own agendas and ideas of what is important. Inevitably, this provides part of the context within which national administrators and politicians take educational decisions. Issues of development assistance are further discussed in Chapter VIII.

1.52 A partial solution to the problem of administrative overload centers around the selective shedding of some current government responsibilities. Some aspects of the delivery of educational services can only be made by government or are best made by it. Some can best be made by other bodies or by individuals. The question of which aspects fall into which category should be receiving considerable attention.

National - Regional - Extra-Regional Dimensions

1.53 Small populations restrict the range of educational programs which a country can offer at reasonable cost and the processes by which they are delivered. Essentially governments are faced with the challenge of determining the most appropriate balance between national provision and regional (and extra regional) opportunities. National political and cultural pressures for the expansion of national institutions and the adoption of national processes have to be placed against the benefits which might be gained from a more co-ordinated and rationalized regional response. In the Caribbean, particularly with regard to technical and vocational education and training, a collaborative approach has been encouraged by CARICOM.

1.54 While it is at the post-secondary school level that the major choices between national and external provision exist, some aspects of primary and secondary schooling also allow choices. At the primary level there is the issue of the production of educational materials, particularly course books and readers. At what level of production does it become viable to produce these indigenously when regional sources already exist? This question becomes even more important at the secondary school level when the choice is between national, regional and extra-regional production and publishing.

1.55 The other major issue at the secondary level is the form of testing and accreditation. One of the major regional initiatives in the Caribbean in the past decade has been the replacement of British examination boards by the Caribbean Examination Council (CXC). This process is virtually universal across countries and subjects at the O level, and is to begin at the A level. One particular area of recent CXC expansion has been pre-vocational subjects. The proportion of students taking these examinations has not been great in the smaller countries. Moreover, the issue still remains of whether regional examinations necessitating regional curricula are most appropriate in these subjects. The CXC examinations presently cover only a minority of secondary school students. As governments begin to place extra emphasis on developing more effective programs for the rest, the issue of examinations will again occur and the national-regional dimension will be have to be decided.

1.56 Small country considerations centering around the range of course offerings and economies of scale are greatest at the tertiary level (Packer 1989). One response across the Caribbean recently has been the development of a single national college in the smallest countries and a number of community colleges in the larger ones. Each of these has incorporated several smaller training institutions and aims to achieve a critical mass of knowledge, expertise and equipment. Even then, however, given the smallness of the qualified age cohort and the labor market demands, particularly in the smaller countries, not all subjects are viable at reasonable cost. Either regional institutions or other country institutions become appropriate and the development of institutional specialization and the modes of access to them are important areas of focus.

1.57 Another issue which potentially has a regional dimension is course validation and articulation and the whole question of international credibility. Any attempt to develop strong regional linkages and the possibilities of shared access to specialized offerings requires a coordination of qualifications. A further question is the degree to which qualifications should be consciously planned to ease the individual into an extra-regional labor market, particularly North America. This again raises the issue of the appropriate mode of financing for post-secondary studies.

1.58 One of the most successful regional institutions in the Caribbean is the University of the West Indies with its three campuses. Like most regional institutions and arrangements, major problems facing regional universities are the equitable distribution of costs and benefits, and the perception by some participating countries that their needs would be more effectively fulfilled by a national institution or a set of bilateral ones. Such considerations exist in the Caribbean. Moreover, the recent growth of national colleges in the smaller countries ensures that the definition of the role of these and of the UWI will remain on the agenda in the 1990s.

1.59 Middle income developing countries with small populations cannot afford educational self-sufficiency. Tradeoffs continually need to be made between the political and cultural desire to provide a full range of educational opportunities nationally, and the often lower costs of shared institutions and of educational services which can be purchased externally. Establishing machinery to manage any external linkages--both within the Region and outside--and developing awareness of the strengths and weaknesses of overseas institutions, are of great importance.

1.60 Many factors other than those discussed above also influence the design, operation and outcomes of education and training in the Caribbean. Important among these is the close proximity of North America. Easy access to overseas television, radio, films, newspapers and magazines, plus contacts with the half a million or so people of Caribbean origin who live in the United States and Canada are widely felt to undermine Caribbean culture and identity. The education system provides a major potential vehicle to develop a critical appreciation among young people of their unique cultural heritage and the place of the Caribbean in the world. A second aspect of geographical proximity to North America is that it provides additional opportunities for post-secondary education and training, especially for students of smaller countries. For policymakers this has both positive and negative repercussions. On the one hand, it reduces the demands for additional training places. On the other, there is a possibility that national and regional institutions will be undermined if the best qualified seek overseas instruction.

1.61 Another set of influences on the educational systems results from aspects of the social structures of the countries. The relatively large proportion of families with a single parent and the consequent need for child care from a very early age is just one of these. Much of the rest of this report focuses on issues of the finance, management, access, academic performance and labor market outcomes of the education systems. Consideration of the wider influences on, and role played by, education in Caribbean societies forms a legitimate, additional agenda for policymakers in the education sector.

CHAPTER II

COSTS AND FINANCING OF EDUCATION

2.1 The previous chapter noted the adverse effects on education of the generally poor recent economic performance of Caribbean countries, particularly the larger ones. This chapter elaborates that discussion, detailing the level and distribution of, and trends in education financing in the Region. It recognizes that while governments provide the vast majority of resources in virtually all countries, important contributions are also made by individuals, non-governmental organizations and enterprises.

A. Government Education Expenditures

Recurrent Expenditures

2.2 The recent economic climate in the Caribbean within which government expenditures on education must be considered has been unfavorable. Table 1.9 in Chapter I presented data on levels and changes in GNP per capita over the period 1980-88. Other than The Bahamas, Barbados, Belize, and the OECS grouping of small countries--in all of which per capita income levels were at least maintained--the economic situation over the past decade has been generally disappointing. Indeed, some substantial income declines have occurred.

2.3 As evidenced by the high literacy and school enrollment rates described in Chapters IV and V, governments across the English-speaking Caribbean in particular have a long tradition of substantial support for the educational system. And despite recent sluggish or declining rates of economic growth, most governments have sustained this support and succeeded in roughly maintaining the share of their total recurrent expenditures allocated to education.

2.4 Significant variations exist between countries, however, in the relative shares allocated to education, as Table 2.1 demonstrates. Among the smaller islands, expenditures on education averaged 18 percent of total government recurrent expenditures in 1988, with a range from 11 percent in Antigua to 24 percent in St. Lucia. Among the larger English-speaking countries, government outlays on education ranged from 9 percent of total fiscal expenditures in Guyana, to 17-19 percent in Barbados, Jamaica and Trinidad and to 24 percent in The Bahamas. Over the period 1984 to 1988, the share of the public budget expended on education in these countries was largely constant, except in Guyana. Finally, among the non-English-speaking countries, education shares ranged from 9-18 percent. As Table 2.1 further reveals, the trend in expenditure in the Dominican Republic over this period has been mixed. Notably, however, the relative share remained significantly below that of other Caribbean countries. In Haiti a substantial increase in government spending on education occurred between 1986 and 1987, but nevertheless remains relatively low.

Table 2.1: CARIBBEAN - FISCAL EDUCATION SPENDING AS A SHARE OF TOTAL GOVERNMENT RECURRENT EXPENDITURE, 1984-88 (percent)

Country	1984	1985	1986	1987	1988
Antigua	12.6	11.5	12.5	11.5	---
Dominica	18.9	17.7	19.0	19.4	19.1
Grenada	19.8	19.1	18.6	15.7	17.5
St. Kitts	19.3	19.2	20.0	17.7	17.0
St. Lucia	25.1	24.3	23.7	24.1	24.1
St. Vincent	21.3	20.7	22.4	25.2	20.6
Belize	20.2	19.8	22.3	20.7	19.6
Bahamas	---	24.5	---	24.1	---
Barbados	21.1	21.7	20.4	20.5	19.3
Guyana	...	11.3	10.3	7.0	9.0
Jamaica	16.6	14.5	16.2	18.1	16.7
Trinidad	17.1	---	17.4	18.3	---
Haiti	10.3	10.0	10.0	15.4	---
Dominican Rep. a/	3.6	11.3	9.9	8.0	9.1
Suriname	25.6	24.9	22.8	26.0	25.7

a/ Expenditures for the Dominican Republic are both current and capital.

Source: See Statistical Appendix (i).

2.5 While illustrative of the overall importance a government attaches to education relative to other public sector activities, the share of the recurrent expenditure allocated to education does not reflect the full social value of governmental input. Notably, government expenditure as a proportion of national income fell between 1984 and 1988 in nine of the fifteen countries in this study as economic adjustment policies were put into place. Table 2.2 reveals the relationship of education expenditures to both total government outlays and gross national product (GNP). Some strong overall patterns emerge across countries. In both Haiti and the Dominican Republic, public recurrent educational expenditures at the end of the 1980s were extremely low, i.e., around 1.3 percent of GNP. According to UNESCO data only one country in the world, the Maldives, allocates less of public spending to education. In contrast, in the larger English-speaking countries the allocations tended to be around 5.0 percent of GNP, with the notable exception of Guyana, which spends significantly less (2.9 percent), as did Jamaica over the latter part of this period. While education's share remained nearly constant between 1984 and 1988, the GNPs of these countries, except Barbados and The Bahamas, fell over the period. In the OECS countries and Belize, the allocations to education also averaged around 5.0 percent of GNP, ranging from 2.4 percent in Antigua in 1987 to 8.6 percent in St. Lucia in 1988. In most cases, current relative shares at present are lower than they were in 1984. However, in contrast to most other Caribbean country groups, these declines in shares in the OECS and Belize occurred amid increasing national incomes.

2.6 Assessing the ability of the education sector to capture government resources, as reflected in Table 2.2, only five of the 15 countries maintained or increased recurrent educational expenditures as a share of GNP over the 1980s. And in two of these--Trinidad and Haiti--GNP itself was falling. Moreover, although Suriname consistently has allocated a larger proportion of its public budget to education than the other 14 countries included in this study, its relative share also declined by a significant amount over the 1984 to 1988 period, i.e., 2 percent of GNP. Overall, the sector has not fared well.

Table 2.2: CARIBBEAN - RECURRENT GOVERNMENT EDUCATION EXPENDITURE AS A SHARE OF GNP, 1984-88 (percent)

	1984	1985	1986	1987	1988
Country/Expenditure					
Antigua	2.5	2.2	2.8	2.4	---
Dominica	5.7	5.2	5.3	5.1	4.9
Grenada	6.4	6.1	5.5	4.6	4.6
St. Kitts	4.1	4.0	4.0	3.8	3.5
St. Lucia	7.2	7.5	7.2	7.8	8.6
St. Vincent	5.9	5.7	5.8	6.0	6.1
Belize	4.3	4.4	5.3	4.4	3.9
Bahamas	---	4.6	---	4.3	---
Barbados	5.5	6.0	5.3	5.9	5.4
Guyana	---	---	---	---	2.9
Jamaica	5.2	5.4	4.7	4.1	4.8
Trinidad	5.1	5.0	5.0	5.6	---
Haiti	1.0	1.0	0.9	1.4	---
Dominican Rep.	1.7	1.5	1.4	1.3	1.3
Suriname	11.0	11.1	9.9	9.6	9.0

Note: Expenditures for the Dominican Republic are current and capital.

Source: See Statistical Appendix (i).

2.7 How do the shares of total recurrent government expenditure and GNP allocated to education, and recent changes thereto in the Caribbean, compare with those of other regional groupings? Table 2.3 presents some comparative data for 1988. With few exceptions, the shares of the public budget allocated to education by Caribbean governments are similar to the averages of East African and Latin American countries. From the perspective of relative share of national income, the distinction between Caribbean country groupings is stark. In the English-speaking countries, a larger share of income is allocated to education than in any other Region of the developing world, while in Haiti and the Dominican Republic the shares are lower than elsewhere.

Table 2.3: CARIBBEAN - PUBLIC RECURRENT EDUCATION EXPENDITURE AS A SHARE OF GNP AND PUBLIC EXPENDITURE BY REGION OF THE WORLD, 1988

	Percent of GNP	Percent of Current Public Spending
East Africa	4.2	20.7
West Africa	4.2	25.0
East Asia	3.5	13.2
South Asia	1.6	14.1
Latin America	3.4	20.2

Source: UNESCO (1988).

2.8 Examining trends in real education expenditures, the situation again varies between groups of Caribbean countries. In the OECS countries, real expenditures on education increased between 1981 and 1988 in Antigua, St. Kitts, St. Lucia, and St. Vincent and remained roughly constant in Dominica and Grenada. In Barbados and the Bahamas, real expenditures increased slightly while in Belize they fell slightly. In Haiti, expenditures rose while severe reductions were experienced in Guyana, Jamaica, Trinidad, and the Dominican Republic.

2.9 Jamaica and the Dominican Republic are illustrative of the experiences of this major group of Caribbean countries. Real education expenditures in both total and per capita terms peaked in Jamaica in 1982 and then fell by around 30 percent by 1986/87, followed by a slight recovery in 1987/88 to some 80 percent their 1982 level (Table 2.4). In primary schooling, real per student expenditures rose by 20 percent between 1975 and 1980 and then fell by 33 percent to 1985. In the Dominican Republic real government expenditures on education fell by 15 percent between 1980 and 1987.

Table 2.4: JAMAICA - REAL EXPENDITURE IN EDUCATION, 1979/80 - 1987/88

	1979/80	1982/83	1984/5	1986/7	1987/8
Real per capita expenditure (1987 US$)	80	84	63	58	64
Real total expenditure (1987 J$m)	935	1015	790	745	830

Source: World Bank (1989b).

2.10 All these data should be treated with some caution, however. Calculations of real expenditures in each case have used consumer price indices as the expenditure deflator. Use of an alternative deflator based on changes in both teacher salaries and consumer prices would have resulted in much lower declines in real recurrent expenditures (Blank, 1989). In effect, the trends in real educational expenditures experienced over the 1980s in several of the largest Caribbean countries largely have resulted in falling real incomes for teachers. They also undoubtedly have led to reductions in the typically already very small allocations for non-wage items. In the Jamaican recurrent budget for 1985/86, for example, wage costs constituted over 95 percent of the total. Even in the OECS countries which have experienced positive rates of economic growth and real increases in educational expenditures, personnel costs as a share of total expenditures average 91 percent for primary and 87 percent for secondary schooling (see Appendix Cost Tables).

2.11 While the data do not permit a disaggregation of non-personnel expenditures, the many competing demands on these suggest that only very small amounts are available for instructional materials. For example, UNESCO data on 1980 outlays by select Caribbean countries for instructional materials indicated that as a share of total recurrent education expenditures they represented 2.3 percent in both Haiti and Jamaica and 1.6 percent in Trinidad. Notably, these allocations reflect the situation prior to the recession and ensuing reductions in education expenditure of the 1980s.

Recurrent Unit Costs by Education Level

2.12 Interpreting comparative data on expenditures by distinct education levels across countries requires some yardstick. One useful measure is the difference in unit costs of providing primary, secondary and tertiary education in the Caribbean, the most recent estimates of which are presented in Table 2.5.

Table 2.5: CARIBBEAN - RECURRENT GOVERNMENT EDUCATION EXPENDITURES BY UNIT COST PER LEVEL (IN US$ EQUIVALENT)

Country/Level	Primary	Secondary	Tertiary	University
Antigua	251	423	1287	---
Dominica	250	449	1201	---
Grenada	160	256	807	---
St. Kitts	221	313	1604	---
St. Vincent	213	275	1783	---
St. Lucia	209	579	1873	---
OECS Countries Average	217	382	1426	---
Bahamas	640	1010	1200	---
Belize	157	362	699	---
Barbados	672	913	1200	---
Guyana	26	54	146	858
Jamaica	101	257	639	5138
Trinidad	596	811	---	10510
Haiti	44	101	---	---
Suriname	445	911	3156	5538

Source: See Statistical Appendix (i).

2.13 Other than Grenada, with a relatively low cost structure, close similarities appear to exist across the OECS countries in the unit costs of education. On average, primary schooling costs US$217 per student, secondary US$382 and tertiary (non-university) US$1,426. Substantial variation exists between costs, by level, among the other English-speaking countries, however. Although unit costs at the primary level average US$366 within this group of countries, the range is vast, from US$26 in Guyana to US$672 in Barbados. At the secondary level, costs within this country grouping tend to be two to three times higher than those in the OECS countries. The notable exceptions are Belize, with costs similar to the OECS countries, and Jamaica and Guyana in which average costs are lower. At the tertiary non-university level, also only Jamaica, Belize and Guyana are exceptions, with other English-speaking countries having unit costs similar to the OECS group. Estimated expenditures per student in higher education (including overseas scholarships) also point to differences between Jamaica and Guyana and the other campus countries.

2.14 Calculating the ratios of the costs of subsequent levels of education relative to primary schooling, a general pattern emerges, as revealed in Table 2.6. On average, secondary schooling appears to be slightly less than twice as expensive as primary education. The costs of tertiary education relative to other levels vary substantially between Caribbean nations, with per student outlays ranging (where data are available) from almost two to seven times that of the primary levels. The lowest ratios (and hence the greater equity in distribution of resources between levels of education) are experienced by the highest income countries. This derives basically from the latter group's relatively high levels of expenditure on primary schooling. University education in relative terms is very expensive, with a substantial discrepancy existing between its unit costs and those of non-university tertiary institutions. Stating the issue starkly, the amount expended to provide one student with one year of university education in Jamaica would provide 50 children with one year of primary schooling.

Table 2.6: CARIBBEAN - UNIT COST RATIOS FOR SCHOOLING BY LEVEL OF EDUCATION, PER STUDENT YEAR

	Primary	Secondary	Tertiary	University
OECS	1	1.8	6.6	---
Bahamas	1	1.6	1.9	---
Barbados	1	1.4	1.8	---
Jamaica	1	2.0	5.4	50.9
Trinidad	1	1.4	---	17.6
Belize	1	2.3	4.4	---
Guyana	1	2.1	5.6	33.0
Suriname	1	2.0	7.1	12.4

Source: See Table 2.5.

Recurrent Expenditure Shares by Activity

2.15 The relative size of enrollments coupled with prevailing unit costs largely determine the shares of total recurrent educational expenditure allocated to each level of the educational system. While demographic factors also are important, the relative share allocated to each level also reflects policy choices with regard to the importance of each. The relative shares for Caribbean countries are presented in Table 2.7. Generalizing, in the OECS countries, Belize and Guyana, the distribution of education expenditure is 60 percent primary, 30 percent secondary and 10 percent tertiary. In the larger countries such as Jamaica, Trinidad, and the Dominican Republic, the share allocated to tertiary education is significantly higher, i.e., around 20 percent. For Latin America as a whole, the average distribution of education expenditures in 1980 was: 51 percent primary, 26 percent secondary, and 23 percent tertiary. Given the relatively high income levels of the OECS countries, the share of expenditures allocated to post-secondary education appears low.

Table 2.7: CARIBBEAN - DISTRIBUTION OF RECURRENT EXPENDITURES BY LEVEL OF EDUCATION (percent)

Country/Level	Primary	Secondary	Tertiary
Antigua	48.0	38.7	13.3
Dominica	67.3	24.7	8.0
Grenada	62.2	29.7	8.1
St. Kitts	50.6	38.3	10.8
St. Lucia	59.7	31.6	8.4
St. Vincent	72.5	21.3	6.1
Belize	65.8	26.8	7.3
Bahamas	49.0	42.0	9.0
Guyana	64.5	28.9	6.5
Jamaica	38.5	40.2	23.3
Trinidad	45.5	33.3	21.2
Dominican Rep.	56.2	24.8	19.0
Suriname*	58.7	14.3	8.8

* Data from Ministry of Education, Suriname.

Source: See Statistical Appendix (i).

Capital Expenditures

2.16 Data for capital expenditures in education are generally less readily available and reliable than for recurrent expenditure. For the OECS, existing economic reports do not disaggregate capital budgets by sector, and education sector-specific reports generally consider only recurrent costs. On average, total Government expenditure in the OECS and Belize represents around 36 percent of GDP, a relatively high share. While over one-fourth of this represents capital expenditure, such outlays appear to be highly dependent on volatile external financial flows.

2.17 As Table 2.8 reveals, foreign grants plus foreign borrowing by OECS Governments represented, on average, 79 percent of aggregate public investment in these countries between 1980 and 1984. Moreover, they actually exceeded public sector investment in four of the six OECS countries in the period 1985-87. Data on the educational sector's share of total capital expenditures are scarce. Those presented in OECS/EEC (1988) for the period 1984 to 1988 suggest that the sector share averaged only 2.3 percent. However, within small economies sectoral allocations inherently will be rather lumpy. Sparse existing data nevertheless suggest that capital expenditures on education tend to be relatively small and strongly influenced by aid flows.

Table 2.8: CARIBBEAN - OECS - PUBLIC SECTOR INVESTMENT AND EXTERNAL FLOWS AS PERCENT OF GDP, 1980-87

Country	1980-84				1985-87			
	P.S.I. (1)	Foreign Grants (2)	Government Borrowing (3)	$\frac{2+3}{1}$	PSI (4)	Foreign Grants (5)	Government Borrowing (6)	$\frac{4+5}{6}$
Antigua	8.2	1.7	3.4	62	6.0	0.8	28.5	488
Dominica	16.0	13.8	7.7	134	13.8	8.5	6.0	105
Grenada	34.6	20.7	9.1	86	29.5	31.1	1.3	110
St. Kitts	11.7	4.1	3.3	63	5.2	2.8	2.9	110
St. Lucia	9.4	3.3	1.4	50	13.0	4.1	2.0	47
St. Vincent	11.1	4.3	4.2	77	10.0	3.2	3.0	62
Average	15.2	7.8	4.9	79	12.9	8.4	7.3	122

Source: World Bank (1990d) p. 231.

2.18 Over the 1980s capital expenditures in Barbados consistently represented around one-fifth of total government expenditure (Table 2.9). While not so dependent on external flows as the OECS, that government's outlays represented almost 50 percent of capital expenditures through the mid- and late-1980s. Project-specific loans were the source of financing of about one-fourth of all expenditures, except in 1985/86, as also revealed in Table 2.9. Education's share of total capital expenditures fell sharply over each successive three-year period in the 1980s, with averages of 15.5, 9.0 and 5.2 percent, respectively.

Table 2.9: BARBADOS - GOVERNMENT CAPITAL EXPENDITURE AND EXTERNAL FINANCING, 1984/85 to 1988

	1984/5	1985/6	1986/7	1987/8	1988
Capital Exp. as % Total Govt. Exp.	19.3	18.9	20.8	20.3	19.7
Project Loans as % Capital Exp.	24.1	3.0	24.8	20.1	23.6
Total External Finance as % Capital Exp.	41.5	26.4	92.2	53.6	40.4

Source: Caribbean Development Bank (1989b), Table 5.1.

2.19 Since the early 1980s, the share of total Government expenditure devoted to capital investment in Trinidad has declined sharply, representing just 8 percent of such outlays in 1989 as compared to 29 percent in 1983 (Central Bank of Trinidad, 1990). Education's share of the declining total also diminished - from 8 percent in 1978 to 3 percent in 1987 (Table 2.10). The Public Sector Investment Program 1988-91 anticipated an average share of 8 percent.

2.20 The situation in Jamaica over the 1980s continues to reflect many of the problems of funding capital expenditures across the Caribbean. Foreign loans over the period 1985-6 to 1988-90 were equivalent to 92 percent of total gross Government investment. The shares of total capital expenditure allocated to education have been consistently low, and falling. In 1978, 1984 and 1987 they were 3.7, 2.1 and 1.3 percent respectively. Real capital expenditures in 1987 were equal to only 62 percent of the 1978 level (Blank 1989, Tables 21, 22). The current Five Year Development Plan envisages a 5.5 percent share for education. For much of the 1980s capital expenditures represented less than 10 percent of total expenditures on education (World Bank 1989b). Recently the situation has improved with capital expenditures representing 16 percent of the education budget in 1989 and 20 percent in 1990. However, in 1990 out of a total of $199 million spent on capital projects in education, foreign loans and grants totalled $162 million.

2.21 With Government current expenditures averaging almost double the levels of current revenues over the second half of the 1980s, capital expenditures in education in Guyana were very small prior to the recent implementation of the IDB-funded primary education project. Over the first half of the 1980s, capital expenditures on education averaged 5.2 percent of total capital expenditures, almost half of which were financed through development aid.

2.22 Comparative data on capital expenditures on education in Barbados, Trinidad and Jamaica for the period 1978-88 are provided in Table 2.10. The sharp declines in such spending over these 10 years are evident. The current Development Plan of Barbados does envisage, however, that via local and foreign financing in a ratio of 3:2, respectively, education will receive 16.5 percent of the total investment budget. These data, together with the bleak investment picture for Guyana and the difficulties facing the OECS, highlight Region-wide problems of financing capital expenditures on education, and the continuing heavy reliance on development aid.

Table 2.10: CARIBBEAN - CAPITAL EXPENDITURES IN EDUCATION AS PROPORTION OF TOTAL GOVERNMENT CAPITAL EXPENDITURES: BARBADOS, TRINIDAD, JAMAICA (selected years, 1978-88)

	1978	1980	1982	1984	1985	1986	1987	1988
Barbados	9.3	12.4	19.0	10.2	10.3	6.4	3.6	4.3
Trinidad	8.1	5.4	4.3	8.6	-	1.7	3.0	-
Jamaica	3.7	4.3	1.7	2.1	2.0	1.5	1.3	-

Source: Barbados Central Bank of Barbados (1989), p. 132. Trinidad Ministry of Education (undated), Table 6.2. Blank (1989), Table 21.

B. Non-Government Education

2.23 Not all the resources used to provide education in Caribbean countries come from governments. Schools and training institutions also are operated for profit by individuals and for a variety of reasons by non- governmental organizations (NGOs). In such schools, tuition fees are invariably charged. Some public schools also charge fees. In several countries, "grant-aided" schools also exist, reflecting a blend of public and private schools. These latter are owned and operated mainly by churches but funded predominantly by government. The precise financial arrangements take several forms. Even in schools where tuition fees are not charged, other costs are incurred by students. These may include expenditures on textbooks, writing materials, uniforms, and/or bus fares.

Non-Government Schools

2.24 Across the whole of the Caribbean, education was initially provided by the churches with elites utilizing principally overseas institutions. Over time, overseas schooling began to be replaced by local private secondary schools. Simultaneously, governments in most countries became increasingly involved through opening additional schools and taking greater control over those operated by the churches and other such bodies. The pace of these developments has varied between countries resulting in the variety of arrangements seen today. The major division is between the English and non-English-speaking countries.

2.25 Public sector expenditure on education in Haiti as a share of GNP is among the lowest in the world. As a consequence, the NGO sector has become the main provider for large segments of the population. The for-profit private sector provides education to those with no access to either government or NGO schools and for the relatively wealthy. The NGO and for-profit private sector together provide 72 percent of primary and 84 percent of secondary school places. Most of the recent growth in primary school enrollments in the non-government sector (increasing from 350,000 children in 1980/81 to 721,700 in 1987/88) has resulted from churches, missions and others operation of subsidized schools in the rural areas and in urban slums. While these help fill the public system gap, such schools generally are poorly resourced and completion rates are very low. Eighty percent of teachers have themselves not completed a full basic schooling. Private schools operate at both the primary and secondary level and are of extremely variable quality, ranging from very high to very low.

2.26 School fee levels in Haiti also vary widely, as highlighted in Table 2.11, outlining the unit costs and the sources of financing for each type of school. The private sector is expensive relative to the incomes of most families. Only 1 percent of rural households can afford primary or secondary schooling in the private sector, regardless of its quality, given average fees per child equivalent to almost 13 percent of total family income. Using the same criterion, only one in seven urban families could afford private primary and low quality secondary schooling, and only five percent high quality secondary schooling. Ironically, the degree of public subsidization is greatest at the university level.

Table 2.11: HAITI - UNIT COSTS AND SOURCES OF FINANCING, BY SCHOOL TYPE (US$)

School Type/Source of Funds	Parents	Government	NGO	Total
Primary				
Public	26	44	33	103
Private Rural	36	-	-	36
NGO Rural	13	-	94	107
Private Urban				
Low Quality	82	-	-	82
Medium Quality	160	-	-	160
High Quality	265	-	-	265
Secondary				
Public	63	101	34	198
Private				
Low Quality	167	-	-	167
High Quality	460	-	-	460

Source: World Bank estimates.

2.27 Other than Haiti, the only other Caribbean country with a significant, large non-government and independent private education sector is the Dominican Republic. Around 20 percent of Dominican primary enrollments are in private schools. The private schools are much better resourced than those in the public sector, as reflected in teacher/student ratios of 1:25 and 1:49, respectively. Private secondary schools provide for almost 30 percent of total enrollments. The socioeconomic status of pupils even in the low quality private secondary schools is considerably higher than that of pupils in public schools, as Table 2.12 demonstrates. Fees in the high quality schools are roughly equivalent to a teacher's annual salary and in the lower quality schools to half that salary. Obviously, private schools are only accessible to a minority of the population.

Table 2.12: DOMINICAN REPUBLIC - SELECT INDICATORS OF FAMILY SOCIOECONOMIC STATUS AMONG SECONDARY STUDENTS BY SCHOOL TYPE

Indicator/School Type	Public School	Lower Quality Private School	Higher Quality Private School
Mother's Education (years)	6.3	8.1	11.2
Father's With White Collar Jobs (percent)	29.0	49.0	73.0

Source: Jimenez *et al*. (1989).

2.28 In the English-speaking Caribbean countries, private schools exist but invariably cater to a very small proportion of total enrollment. For example, enrollments in private primary schools constitute 5 percent of total enrollments in Grenada, and 2.5 percent in St. Vincent. At the secondary school level, private enrollments are 2 percent in Grenada, 5 percent in St. Vincent, and 11 percent in St. Lucia.

2.29 The dominant form of non-government schools is the grant-aided school, which exists in all Caribbean countries except Jamaica. Grant-aided or 'assisted' schools are owned by non-governmental bodies (predominantly churches) and financially aided by government. Administrative responsibi- lities for such schools are shared. The level of grant and the nature of the financing mechanisms vary between countries as does the division of operational responsibility.

2.30 In the OECS countries, grant-aided schools are numerous at both the primary and secondary level. In Grenada, for instance, 73 percent of primary and 63 percent of secondary school enrollments are in grant-aided schools. In Dominica, six of the eight secondary schools are grant-aided as are nine of the 21 schools covering 49 percent of enrollments in St. Vincent. Grants cover all teacher salaries and EC$45 per pupil in Dominica, and up to nine teachers plus EC$50 per pupil in St. Vincent. Neither the public schools nor the grant-aided ones charge fees.

2.31 "Assisted" schools also are prevalent in Trinidad, providing 72 percent of all primary and 19 percent of all secondary level places. Moreover, these schools account for 60 percent of the "academic stream" of students. Private secondary schools also exist, mainly catering to those who cannot gain admission to the assisted and traditional government secondary schools, yet can afford the fees. Around 10 percent of students taking the regional examinations are from private schools.

2.32 Of all Caribbean nations, Belize has the most developed system of grant-aided schools. Indeed the Government's partnership with the churches has been declared the centerpiece of education policy. Denominational schools provide 75 percent of primary places and 50 percent of secondary places. Grants to primary schools cover all teacher salaries plus 50 percent of supplies, maintenance and capital expenditures (if any). These transfers account for 53 percent of the Ministry of Education's budget.

2.33 For the secondary schools, grants from the Belize government cover 70 percent of teachers' salaries and supplies, 50 percent of capital expenditure and B$1,500 per school for maintenance. These outlays represent 13 percent of the Ministry budget. The share of grants in total secondary education outlays, however, is declining as the Government constructs new rural and technical secondary schools. Government responsibility in the grant-aided schools is to develop curriculum, train teachers and administer selection examinations, while the churches are responsible for all personnel matters, maintenance and textbook selection. Such grant arrangements reportedly save Government resources and promote pluralism and diversity. Further, the unit costs of assisted schools reportedly are below those of Government schools, while concomitantly their expenditure on educational materials is greater. Textbooks have to be bought by students at a cost of B$100-350 a year in both Government and grant-aided schools.

2.34 Jamaica stands as the one notable exception to the widespread existence of privately owned, grant-aided schools in the English-speaking Caribbean. As in the other countries, schools were originally run by the churches and trusts and a system of government grants emerged to partially fund them. Over time, however, the schools came to be fully funded by government. The only remaining influence of the churches and trusts is that derived from their participation on the school boards. Private schooling has always existed. In 1988, enrollments in private primary schools

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represented some 6 percent of the total, and in secondary schools, 4 percent. Concomitant with the great contraction in public educational expenditures in 1985/86, the Government of Jamaica eliminated boarding grants for all tertiary institutions and increased fees. It was anticipated that tertiary fees would increase gradually to one-third of the economic cost, but student and wider social resistance has hindered attainment of desired levels of cost-recovery.

2.35 What, then, is the current role of the non-government sector in the provision of schooling in the Caribbean? Table 2.13 provides a partial summary of the distribution of primary and secondary enrollments by type of school ownership. Overall, private independent schools tend to fall into two categories. In Haiti and the Dominican Republic, at least some of these schools are high quality and prestigious. Parents pay (those who can afford to) because such schools are deemed to provide the best education. To a small extent this motive also exists in some of the English-speaking countries, with some members of particular religious denominations selecting schools which enable their children to be educated in that selected environment. At the primary level parents undoubtedly send children to private schools because they believe this increases their chance of passing the common entrance examination for admission to secondary schools. In contrast, private secondary schools exist largely to cater to those children who do not achieve good enough examination results to enter the more prestigious government and government assisted schools, but whose parents do not want them to attend schools which do not focus their curriculum toward passing external examinations. In the special case of Haiti's NGO-operated independent schools, they address the large unmet need within the public sector for schooling by children residing in rural and urban marginal areas.

Table 2.13: CARIBBEAN - PRIMARY AND SECONDARY ENROLLMENTS BY SCHOOL TYPE (percent)

	Primary			Secondary		
Country	Private	Assisted	Public	Private	Assisted	Public
Dominican Republic	19	---	81	33	---	66
Haiti	72	---	28	84	---	16
Antigua	---	33	67	---	20	80
Grenada	4	73	23	2	63	35
St. Vincent	2			5	49	46
Bahamas	---	25	75	---	21	79
Trinidad	---	72	---	10	17	73
Jamaica	6	---	94	4	---	96
Belize	---	90	---	---	50	---

Source: See text.

2.36 Private schools can be viewed from the perspective both of efficiency and equity. If parents are prepared to pay fees, they must believe that the schools are more effective than the cheaper (public) alternative. Indeed, other than in certain areas of Haiti, public alternatives do exist. Unquestionably, the average results of the common entrance examination for the private primary schools in Jamaica and Grenada are well above those for the public schools. Further, the examination results in the private secondary schools in Trinidad are better than those in the public comprehensive schools, although not as good as the results in either the assisted schools or the Government secondary schools. Even among students enrolled in the lower quality private schools in the Dominican Republic, examination results are better than those in Government schools, despite the latter's higher unit costs (Jimenez *et al.* 1989). This situation is confirmed in several other similar studies. Such comparisons (except in the case of the Dominican Republic) are often made without ensuring the true comparability of the two groups of students. Pupils in the private schools may on average possess greater academic ability than those with whom they are being compared. Certainly, no strong evidence generally exists to argue that private schools should be subsidized by government because of any greater inherent efficiency. And clearly, where private schools exist to any significant degree, they tend to be accessible only to a very small proportion of high income families, thus skewing the results of any such comparison. Nevertheless, private schools do reduce pressure on government resources. Thus, while they need to be accredited and regulated, regulations should not be so stringent as to inhibit their role in providing education. In Haiti, specifically, an argument could be made for public support to NGO schools on the grounds that, in fact, the Government currently is unable to provide an alternative.

2.37 The case of the assisted or grant-aided schools provides distinct policy intervention possibilities. As Belize data highlight, a system of grant-aided schools does provide a means to tap resources beyond the governments'. In Belize's primary schools, 50 percent of all non-teacher salary expenditures are covered by the churches or community groups, and in secondary schools, 30 percent of all recurrent costs are covered. In addition to increasing total educational resources, the independence allowed to management boards potentially may result in more effective use of resources within schools. Recent estimates suggest that while unit costs are lower in the aided schools, expenditures on non-salary 'educational services' are greater, as Table 2.14 demonstrates. The assisted schools are not without their problems, including the very poor physical state of many primary schools, the absence of textbook standardization, thus precluding lower cost bulk-buying, high attrition rates, and poor results in the regional examination. Nevertheless, the potential positive effects of such approaches in terms of resource mobilization merit additional study.

Table 2.14: BELIZE - SCHOOL EXPENDITURES BY TYPE, 1987/88

Ownership	Unit Cost US$ equiv	Salaries as % of Budget	Educ.Services as % of Budget	Teacher/ Pupil Ratio
Government	477	89	8	1:15
Church	392	74	23	1:17
Community	300	81	16	1:16

Source: World Bank (1989a).

2.38 While private primary and secondary schools are not common in the English-speaking Caribbean, profit-seeking institutions providing post- secondary vocational training are more widespread and are obviously responding to demands which the public sector is unable or unwilling to meet. As assisted schools, such institutions relieve pressure on government resources. Hence, regulation of their activities should be limited to areas such as ensuring compliance with necessary public health standards and guarding against fraudulent practices. Virtually no information regarding such institutions has been systematically collected within the Region, although evidence available suggests enrollments are high. A recent report on the technical-vocational education and training system in Jamaica (GE Government Services, 1990) provides a rough estimate of 2,900 trainees a year, mainly in business and commercial subjects and beauty/cosmetology. This figure is twice as large as enrollments in the country's Community Colleges.

2.39 Another sector which has received little attention in most discussions of the financial problems facing Caribbean education and training systems is in-plant training. The numbers involved in some countries, however, could be large. A recent (1990) consultant study on private sector in-plant training in Jamaica reported that 61,000 training places were available (and 43,360 utilized) in firms with over 10 employees, and that training was undertaken by 968 full-time and 874 visiting instructors. This study, and its implications, will be discussed in more depth in Chapter VI. That study estimates unit costs of J$1,717. If this figure and the estimated level of training are correct, total expenditure on in-plant training in 1990 was J$74 million--equivalent to over 7 percent of the Jamaican Ministry of Education's recurrent budget and 27 percent of its allocation for technical, vocational and tertiary education.

Private Expenditures on Public Education

2.40 Private expenditures on education are not limited to those in privately operated schools. Attending public schools also involves costs for the pupils or their parents. As noted in Table 2.11 which delineated the sources of funding of schooling in Haiti, parents contributions represent about one-fourth the total outlays on primary, and one-third the total expenditures on secondary schooling. While tuition fees are not charged in government or grant-aided primary or secondary schools in any of the English-speaking countries (except a nominal charge in Belize), other charges and expenditures are made. Only Barbados, for instance, provides sets of textbooks and writing materials free of charge. The cost of books in OECS countries is estimated to be EC$300-600 a year.

2.41 Indicative of the often high levels of private expenditures on education is a recent study of unit costs completed by the Jamaican Ministry of Education (1990a). Based on a sample of all-age and secondary schools (plus private secretarial and business schools), that study found substantial average annual household outlays on transport, lunch, uniforms, supplies, additional tutoring, books and schools fees, as outlined below in Table 2.15.

Table 2.15: JAMAICA - PRIVATE EXPENDITURES ON EDUCATION, 1990

	All Age	New Second.	Second. High	Second. Comp.	Second. Tech.	Private Secret.
Fees	18	30	228	93	319	1587
Other expenses	1571	2049	2810	2289	1904	3049
Total	1589	2079	3038	2382	2223	4636
Total in US$ equivalent	205	268	392	307	287	598

Source: Jamaican Ministry of Education, 1990.

2.42 These totals can be compared to the government-borne unit costs of around US$100 for all-age schools and US$260 for secondary schools. Between 65 to 80 percent of the "other expenses" in the public schools are transport, lunches and uniforms. Private expenditures on books and supplies averaged US$45 in the all-age schools, US$60 in the new secondary schools and US$110 in the secondary high schools. The ratio of public to private expenditures varies considerably by type of tertiary institution, as noted below (Table 2.16).

Table 2.16: JAMAICA - RATIO OF PUBLIC TO PRIVATE EXPENDITURES ON TERTIARY EDUCATION

	Public	Private
College Arts Sci. Tech.	1	2.6
Teachers Colleges	1	0.8
Community Colleges	1	3.5
University of the West Indies		
Arts and Social Sciences	1	0.8
Natural Science	1	0.6

Source: Jamaican Ministry of Education.

2.43 Total annual private expenditures average US$1,850 at the University of the West Indies (UWI), US$1,100 at the College of Arts, Science and Technology (CAST), US$840 at the teachers colleges, and US$730 at the community colleges in Jamaica. The portion of these outlays attributable directly to education per se are: US$310, US$216, US$155 and US$145, respectively. All of these expenditure estimates need to be seen in the context of a per capita income of around US$1,100. Quite obviously the large commitment to education which has traditionally been made by governments in the English-speaking Caribbean is mirrored by students and parents.

C. Toward a Strategy for Education Financing

2.44 While Caribbean economies may expand moderately in the future, and tax elasticities are quite buoyant, increases in government revenues are by no means certain. In any case, the high debt-servicing burden built up in all countries over the 1980s, coupled with traditionally low recurrent budget surpluses, suggest continuing severe constraints on the growth of government expenditures in the near future. Partly as a result of public debt repayment, non-government incomes, in fact, may rise faster than government incomes. In such a context, education leaders need to devise a general financing strategy encompassing the public and private sectors and individuals. Below some initial suggestions are offered to help formulate such a strategy.

(a) In almost all countries over the next two decades the size of 5-14 and 15-19 year old age groups will fall, resulting in smaller classes. In areas where enrollments are particularly small, a case may exist for more multigrade teaching and fewer teachers. The challenge to education ministries in these circumstances will be to devise convincing arguments and mechanisms to retain any 'savings'accruing from this consolidation in order to enhance quality of education via increased expenditure on educational materials, in-service training, and other education needs.

(b) While government recurrent expenditure has been maintained as a proportion of total government recurrent expenditure in most countries, these totals have been falling as shares of national income and hence so has educational expenditure. Within the context of structural adjustment programs, as governments withdraw from some of the economic activities in which they traditionally have been involved, reduce various forms of general subsidies, and increase the efficiency of the public sector, it could be expected that the share of government expenditure devoted to education (and health) will increase. Any attempt to reduce education's allocation should be strongly resisted. An initial objective for education ministries might be to regain the sector's share of national income of a decade or so ago.

(c) The downward trend in education's share of total capital expenditures is even more striking. Anticipated lack of growth in the size of the school-age population in many countries does not negate the urgent need for increased investment, given the generally inadequate state of education facilities and paucity of furniture and equipment. In intra-governmental discussions on public sector investment programs, the education sector will need to marshall hard social and economic evidence regarding the implications and costs of deteriorating educational infrastructure. The falling ratio of capital to recurrent expenditure in recent years implies that the benefits from each additional unit of recurrent expenditure exceed those of an extra unit of capital expenditure. This tradeoff now needs to be made explicit, and the choice carefully reassessed.

(d) Increased capital investments will be a prerequisite to enhance education throughout the Region. Amid limited domestic resource availability, and competing demands for external grant financing, many governments will remain heavily dependent on external borrowing. The high rates of return on education investments are well documented. Moreover, external borrowing provides a potentially important source of financing for external debt, given that actual education expenditures are highly local cost intensive. Hence, governments that have reasonable debt/service ratios should include borrowing as an integral part of their education financing strategy.

(e) Much greater knowledge is required of the current scope and potential contribution of privately operated training institutions and of in-plant training to meet education needs. Equally important, possible constraints to their further growth need to be identified. Recommendations deriving from the Jamaican study on in-plant training which merit consideration elsewhere also included: encouraging national development banks to allow in-plant training programs access to their credit lines, allowing imported equipment and supplies for training programs to enjoy concessionaire duties similar to those for certain high priority economic activities, allowing employers to pay trainees lower than the minimum wage for the first six months of their training. Governments might also consider contracting out some of the training programs for their own employees to private institutions and developing joint private/public sector programs. Once governments begin to view the private sectors' training potential in a positive light, substantial possibilities may exist for the expansion of post-secondary education and training at lower unit costs than currently borne by the public sector. Use of vouchers to enhance competition for students between private and public training institutions may be considered as a means not only to increase efficiency but also to enhance quality.

(f) In many countries, government funding of primary, and often secondary schooling, is limited to the provision of central administrative services and teachers' salaries and training. While no tuition tends to be charged in public schools, the cost of most education materials is fully borne by parents. Beyond ongoing efforts to involve parents in school maintenance, the scope for increasing private financing of primary and secondary education is limited. At the post-secondary levels, greater potential exists for higher pupil contributions. Since only a minority of youth has access to post-secondary programs, the future private benefits tend to be large. Moreover, there is significant emigration among some of the more highly trained groups. The challenge is to devise fee structures coupled with loan programs which recoup significant amounts of resources without reducing the relative opportunities for students from low income families to receive higher education and training.

CHAPTER III

REGIONAL CHALLENGES AND ISSUES IN EDUCATION

> ". . . future growth will very much depend upon whether we can successfully make the transition from a pattern of development principally dependent on natural resources to one dependent on human resources and knowledge."
>
> Alister McIntyre, Vice Chancellor of the University of the West Indies, 1988.

> "Failure to produce an appropriately trained and educated population would constrain the adaptability of the Commonwealth Caribbean to structural changes in the world economy . . ."
>
> Compton Bourne, Caribbean Development to the Year 2000, 1988

> "The success of the Region's efforts to achieve structural adjustment and transformation will depend upon the creation of appropriate skills and levels of aptitude."
>
> CARICOM, Survey of Technical and Vocational Education and Training, 1988

3.1 Most comparative indicators of education (and health) provision and status place the majority of Caribbean countries well above the average for all countries at similar levels of economic development. Literacy rates are high, primary schooling is nearly universal (apart from Haiti), and enrollment ratios among the secondary school age group also are mostly above the average for middle income countries. Aggregate expenditures, too, are generally at the top end of the range. Despite these measures, widespread concern exists throughout much of the Region that relative to the demands societies will place on them in the future, most education and training systems are weak in a number of key areas. If the aspirations reflected in the quotations above are to be reached, several changes to existing policies will be required. Before detailing in subsequent chapters selective strengths and weaknesses of each distinct level of Caribbean educational systems, and suggesting some policy options to explore for redressing them, this chapter attempts to synthesize the principal areas of Region-wide concern in education. These issues can be grouped into three categories: coverage and access, quality and effectiveness, and resources and resource use. In the final section of this chapter, economic and other arguments are presented which argue strongly for assigning high priority to investments in education within the development strategy for the Caribbean.

A. Coverage and Access

3.2 Net primary enrollment ratios across the English-speaking Caribbean range between 78 and 100 percent and for the 12 to 15 year age group between 56 and 93 percent. High overall ratios, however, mask substantial variations which exist between groups of countries. Equally important, particularly in select countries, aggregate enrollments tend to disguise differentials in access to resources, as some types of school are more expensive to operate than others.

3.3 Differential access has spatial, gender and ability dimensions. First, enrollment rates tend to be higher in urban than in rural areas, as well as in the largest island within archipelagos compared to the smaller ones. Further, per pupil expenditures tend to demonstrate a similar pattern. For instance, the average annual cost per student in urban secondary schools in St. Vincent in 1987 was almost exactly twice that in rural secondary schools.

3.4 Second, across the Caribbean, girls achieve better educational results than boys, particularly in primary school as reflected in common entrance examinations, but also in secondary school as evidenced by regional examinations. While their domination in test scores declines somewhat at the post-secondary level, most likely reflecting the clear gender differentiation which exists in the types of subject studied at this level, female enrollments still outnumber males , including at the University of the West Indies.

3.5 Third, although enrollment rates tend to be high among the secondary school age group, the types of school and the levels of resources devoted to them vary. For example, in several countries substantial proportions of secondary enrollments are still in so-called "all-age" primary schools or primary tops. Those who pass the common entrance examination enter grammar or high schools while others are fed into some form of junior secondary school. Unit costs of these school types differ widely. A Ministry of Education study in Jamaica indicates that unit costs in the new secondary and comprehensive high schools are twice those in the all-age schools, while secondary high school costs are three times higher. Again, in Trinidad, unit costs of senior comprehensive schools are twice those of junior comprehensive schools and 50 percent higher than the traditional grammar schools.

3.6 Primary enrollment ratios in the Dominican Republic are similar to the English-speaking countries, but much lower in Haiti. For secondary schooling, both of these countries have a lower level of provision than in the English-speaking Caribbean and variations in the unit costs of different schools are again extensive.

3.7 While primary and particularly secondary school enrollment ratios in English-speaking countries tend to be above the expected average for their income group, enrollments in tertiary level education are much more limited (except Barbados). In some cases this reflects a lack of places. In others, however, it is the consequence of insufficient numbers of applicants with the necessary entry requirements. If the aspirations spelled out at the beginning of this chapter are to be reached and the base for economic development is to shift from natural resources to the service sectors and hence human resources, this situation will need to change and larger numbers of people will have to be encouraged and provided higher levels of education.

3.8 Four central issues are involved. First, how are post-secondary institutions to become more responsive to the labor market implications of economic change? Second, where are these institutions to be located geographically and how are individual countries to decide on the combination of national-regional-overseas provision? Third, how is post-secondary education and training to be financed? And fourth, how best can national and regional institutions together offer integrated programs in ways which encourage access by large numbers of working people, in addition to school graduates. Of relevance to some of these considerations--particularly the choice of course offerings and the financing arrangements--is the prevalence across much of the Caribbean of emigration by significant proportions of some types of skilled labor.

B. Quality and Effectiveness

3.9 Throughout the Caribbean many teachers, officials and employers decry the low standards being achieved by many graduates from all levels of the education and training system. While some believe that absolute standards have been falling, often citing declining average test scores over time, others argue that such trends are the inevitable result of the massive expansion of education infrastructure over the past 20 to 30 years and the consequent entry to the educational system of students with a wider range of ability than in the past. Whether standards have fallen or not, there is a universal concern that they are in some sense too low, particularly in basic cognitive skills.

3.10 In the English-speaking countries, the main (often only) test taken by primary school students is the common entrance examination, taken at the end of the primary cycle, which is used as a screening mechanism for secondary schools. Pass rates depend solely on the number of secondary high school places and therefore indicate little about trends in quality. The closeness of the mean scores to those which could be achieved randomly, particularly in English and mathematics, is a starting point for concern in several countries. Only in Jamaica and St. Kitts are there programs to administer more continuous achievement testing in the primary schools. The first sets of results of such tests for Jamaica are cause for concern; for instance, two-thirds of sixth grade students were found to read at grade four or below.

3.11 Teachers in secondary schools spend much of their time in the lower classes offering remedial instruction. This may be part of the reason for the often disappointing performances in the secondary schools, even including those very selective ones which focus on building a student's capabilities to pass the regional examinations. Across the region only around one in eight of the students who take this examination gain the minimum number of passes in one sitting formally required for entry to tertiary studies or public sector salaried employment.

3.12 Pass rates in the tertiary institutions, including at the A-level examinations required for entry to the University of the West Indies, are again generally rather low. The University has recently felt the need to run remedial English language courses. In Haiti and the Dominican Republic the situation appears to be even worse. In the latter, a recent assessment of mathematics skills in the eighth grade produced an average score of 27 percent.

3.13 Low quality of student output, as reflected in test scores, is in many countries being accompanied by some indicators of severe inefficiencies within the schools. The combined effects of repeaters and dropouts results in the average number of school years attended being much higher than indicated by the length of a school cycle. For instance, in the Dominican Republic, of every 1,000 children who begin primary school, only 345 complete sixth grade at the expected time. And in Haiti between eight and fifteen years are required to produce one sixth grade graduate, depending on school type. Over 4,000 children entered the first year of school in St. Vincent in 1984. Five years later there were 3,058 children in the fifth year classes.

3.14 Data on the coverage and quality of education for the English-speaking countries are presented in Table 3.1, which delineates the chances of achieving different educational attainments for each group of 100 primary school entrants. The data were collected from very many sources and should be seen as indicative of general outcomes rather than reflecting an accurate probability for any given student. These date nevertheless illustrate the very low proportions of children who succeed at secondary school, as currently defined, and the small numbers (apart from Barbados) who take any type of post-secondary course, including at the two regional universities. Until the primary schools can significantly improve the performance level of their graduates, and secondary schools and tertiary institutions offer a sound education for a much larger proportion of the age group than is currently the case, it is unlikely that most Caribbean nations' labor force will be capable of supporting a development strategy dependent more on human than natural resources.

3.15 Linked to the concern over the inability of many pupils to attain levels of competence set by the schools is a further set of educational issues. These relate to the high levels of unemployment found among school graduates in most Caribbean countries. Official statistics indicate that over half of the 15-24 year old age group are unable to find employment in several countries. A common reaction is to put the

Table 3.1: CARIBBEAN - PROBABILITIES OF DIFFERENT LEVELS OF EDUCATIONAL ATTAINMENT ACROSS THE ENGLISH-SPEAKING COUNTRIES

Trinidad	Antigua	Barbados	Belize	Dominica	Grenada	Guyana	Jamaica	St.Kitts	St.Lucia	St.Vincent	
Enter Primary 1	100	100	100	100	100	100	100	100	100	100	100
Complete Primary	98	100	59	93	95	80	85	97	93	98	100
Enter Post Primary	43	4	..	..	48	54	32	4	50	39	23
Enter Secondary	55	96	35	25	45	26	53	93	23	39	70
Complete Secondary	..	..	21	..	38	26	53	..	21	..	65
CXC Stream	55	..	21	25	...	26	32	43	21	35	65
CXC English	28	..	8	7	12	3	8	18	9	13	(24)
CXC Math	18	..	6	7	8	3	7	15	7	11	(19)
4 + CXC	4	8	2	2	3	2	3	4	2	4	5
Take 'A' levels	..	5	2	3	5	...	3	5	2	6	7
Pass 2 + 'A' levels	..	..	1	1	1	...	..	2	1	1	2
Enter other Tertiary	..	42	5	3	3	6	7	9	4	4	10
Enter Caribbean University	1.5	3	0.25	0.25	1	2	2	2	1	0.5	3

NOTES:

1. The probabilities are based on each 100 primary 1 entrants.
2. .. indicates a data gap.
3. ... indicates not applicable.
4. CXC is the Caribbean Examinations Council.
5. 'A' level is the General Certificate of Education Advanced Level which is required by entry to U.W.I.

blame for this on the educational system by arguing that graduates do not possess the sort of directly marketable skills employers demand. The call is then made for more vocational skill training to be provided, particularly in the schools catering to children with lower levels of academic ability. The counter arguments are: this should be the responsibility of employers, given that it is employers who predominantly require literate and numerate workers; skills training is best done closer to the workplace; and that while schools can perhaps equip students to take up opportunities when they arise, they cannot directly create unemployment on any large scale. The outcome of this debate will be very important for Caribbean education in the 1990s.

3.16 A third concern with what and how effectively schools are teaching focuses on social development and life skills. Drug abuse, crime and teenage pregnancy in many Caribbean countries are among the more obvious signs of teenage disillusionment and disaffection. Again, while these are the result of a myriad of social and economic circumstances, schools tend to be assigned some of the responsibility. Schools are also expected to counter the widespread foreign cultural influences and to bolster the self-image of Caribbean youth. Defining an appropriate role for the educational system in individual and national social development is likely to take on increasing importance over the coming years.

C. Resources and Resource Use

3.17 The coverage, quality and effectiveness of educational provision clearly depends in large part on both the level and the use of resources. Chapter I presented population projections which indicated declines in the primary school age group, and to a lesser extent in the secondary age group, in several countries. Just how declining enrollments can be translated into a release of resources which can then be utilized to increase quality-enhancing expenditures will be one of the major concerns of education ministries over the next decade or so. In the first place, it may be necessary to convince ministries of finance that any savings should be retained within the system. Other than Haiti, the Dominican Republic and Guyana, where government expenditures on education as a proportion of GNP are low, in all other Caribbean countries they are already relatively high. Additional education resources, therefore, are likely to have to be raised outside of governmental budgets, unless rates of economic growth are significantly higher than over the past decade. Given the already substantial level of student expenditures on public education, as revealed in data for Jamaica (Chapter II), it is evident that mobilizing increased private resources will require new, innovative interventions. The large numbers of students in privately run institutions offering clerical and business training and in fee-paying, non-formal classes in several countries, however, are important to note.

3.18 Alongside any increases in education resources which may emerge will also be the need for initiatives to manage existing resources more effectively. In this context a very wide range of potential areas exist for consideration, beginning with the teaching force. In several countries, teacher attrition is high either to other parts of the public service or to the private sector. Replacement requires additional training costs and brings a less experienced teacher.

3.19 Together with the teacher, the child is the most important resource in the learning process. Measures to ensure that educational inputs can be most effectively used by children may require interventions normally thought to be beyond Ministry of Education responsibilities. The school feeding programs in Jamaica and Haiti are examples. The appropriate allocation of teacher and pupil time between different subjects and activities is of continuing concern as are the appropriate processes for producing, publishing and obtaining written materials and ensuring student access to them. Issues relating to the use of physical facilities are another area. Small countries cannot provide a full range of educational services. Regional institutions are required. How these are funded is a further question. Finally there are both national and regional issues raised by development aid.

3.20 One of the important lessons learned over the past decade or so in development finance and development administration is that governments can become too stretched. When this occurs, financial resources are scattered thinly across a very wide range of activities, resulting in many of them being funded below a critical minimum level. Another type of resource is also scarce--administrative expertise. This is particularly the case in small countries. One response is to decentralize decision-making. A key distinction must then be made between control and regulation. With the intention of increasing both the resources for education and the efficiency in their use, governments may find it productive to determine what activities they clearly are best at and to encourage the participation of non-governmental groups and individuals in the delivery of other services within a regulated framework. In the final section of this chapter, the potential benefits of a well-resourced and efficiently organized education and training system are outlined.

D. Benefits from Educational Investment

3.21 The next four chapters discuss the individual levels of the education and training systems in the Caribbean in some detail, with emphasis on issues associated with coverage, quality and resource use. As a backdrop for that discussion, it is useful to clarify why education is regarded as being of central importance to the political, social and, particularly, economic development of the Caribbean.

3.22 The benefits to be derived from investments in education and training are several. In addition to the economic rationale, as discussed below, there are broad political and social dimensions. First, there is the consideration of political sovereignty and the necessary ability to fill positions of authority at all levels with indigenous personnel. Second, the educational environment in both quantitative and qualitative terms will determine whether or not the Caribbean will be able to utilize the worldwide expansion of scientific and technological knowledge to ensure that the Region does not become marginalized. Third, education is a basic human right and a necessity if individuals are to be able to participate fully in contemporary society and to ensure that they are not exploited through a lack of knowledge, especially numeracy and literacy. Fourth, education is a possible avenue for social mobility and its expansion can be associated with increased equity as additional expenditures encompass the more disadvantaged groups. Finally, a common education system accessible to all children is important for the development of a world view which provides a strong sense of personal and national identity within the context of a wider world of experience and opportunity.

3.23 These broad benefits of education are complemented by a substantial body of research documenting the high social and economic payoffs of investments in education. Higher levels of education, particularly of females, are associated with fewer children, more education and with greater success for those children, a healthier family and a longer life expectancy. Further, over the past 30 years, a very large body of evidence has been developed from around the world which demonstrates close relationships between an individual's level of education and his or her income. These income data have been used together with estimates of educational costs to calculate the rates of return--similar to profit rates calculated for more traditionally-conceived investments. Even accounting for sources of upward bias in some of the calculations, the rates are almost always positive. Moreover, where it has been possible to compare them to the outcomes of other forms of investment, the comparisons have usually tended to be favorable.

3.24 The assumption behind using people's earnings as measures of the benefits of education is that higher earnings result from higher productivity which increases the level of national income. An argument has sometimes been made that the wages and salaries of employees are often protected and inflated, being more linked to historical and institutional factors than to levels of labor productivity. Fortunately, however, over the last decade in particular, a considerable amount of survey data across Africa, Asia and Latin America has been accumulated which clearly shows that the incomes of the self-employed are also closely linked to their levels of education. For these workers, it is clearly their level of productivity which determines their income. Research into farmers' levels of output also provides evidence of the positive link between education and productivity. Skeptics of the economic payoff of education sometimes point to the high levels of school graduate unemployment in many countries. Often, however, these decrease fairly rapidly over time, indicating that at least part of the high levels results from graduates not accepting jobs which are immediately available in the hope that they will eventually acquire one closer to their aspirations. Whatever the reason, it remains the case that over a working life the economic benefits almost invariably increase by level of education.

3.25 At the macroeconomic level the evidence is equally clear. The examples of Japan, Singapore and South Korea, which combine very high levels of educational investments with successful economic performance, are well known. Less well known are the results of exercises in growth accounting which attempt to measure the importance of individual variables in explaining specific rates of economic growth. One major study along these lines (Denison) concluded that just over one-quarter of the growth in GDP in the United States between 1929 and 1976 could be accounted for through increases in the educational level of the labor force. More recently, as part of the World Bank's (1986b) study of education in Sub-Saharan Africa, an analysis of the growth performance of 31 African countries between 1965 and 1983 concluded that 30 percent of GDP growth had resulted from educational investments.

3.26 No single factor can by itself determine the course of economic development. Increased investment in education and training will not automatically increase the rate of economic growth. However, the evidence indicates that it is a vital factor and that without this investment growth will be retarded. In other words, it is an essential complement to other factors. Whether a high quality and efficient education system will result in increases in national income largely depends on a series of factors, including: the economic policy environment and the extent to which this encourages economic activity through exploiting the most profitable markets, supporting complementary investments, and maximizing the use of labor. Increased education in isolation does not create jobs in large quantities. What it does is to ensure that jobs created will be performed more effectively at a higher level of productivity.

CHAPTER IV

THE EDUCATIONAL BASE: PRESCHOOL AND PRIMARY EDUCATION

A. Preschooling

4.1 Preschool education in the English-speaking Caribbean has to be set within the changing social and economic realities of the Region. In traditional two-parent families, economic aspirations and rising costs are increasing the pressure on both parents to work. As women become better qualified they are becoming less willing to stay at home even when families can afford for them to do so. Simultaneously, single parent, female-headed families are increasing. UNICEF (1990) estimates these families represent between 30-50 percent of households across the Region, many of which are economically vulnerable. In Jamaica, for example, where 36 percent of households are headed by women, the proportion unemployed is three times that of male heads of household and earnings, when employed, are lower (World Bank, 1988c). The growing problem in the Caribbean of unmarried teenage mothers, who tend to be concentrated in the lower-income groups, is likely to add to the number. These pressures are increasing demand for day-care and preschool provision. It is useful to make a clear distinction between day-care, which generally is intended for infants through children 3 years of age, and preschool for those from 4 to 5/6 years.

4.2 Advocates of preschooling argue that the benefits can go well beyond providing a childcare service for working parents. There is convincing evidence that an appropriately designed preschool program, which is community-based and parent-oriented, can have a lasting effect on a child's behavior and performance in primary school and beyond. Perhaps the best known preschool program is Head Start in the United States, which focuses on low income children. In the Caribbean, Jamaica has had a comparable preschool program since the early 1970s. Research into the effects of the Head Start program show that while achievement test gains tend to dissipate quite quickly a more lasting impact occurs in areas such as attendance, promotion and staying in school. The children who gain most from the program tend to be those who are initially most disadvantaged. Results from Jamaica and elsewhere also suggest that the impact of preschool education is likely to be most noticeable in the area of motivation and personality development and not so much in cognitive skill development (Gamble and Zigler, 1986).

4.3 Within several developing countries preschool enrollments have increased rapidly over the 1960s and 70s. in recent years. Between 1965 and 1980 median enrollment ratios increased from 1 to 4 percent in the lower middle income countries and from 5 to 15 percent in upper middle income countries. In Mexico, for example, the number of preschools increased from 3,000 in 1970 to 13,000 in 1980 and 26,000 in 1982. The little research which has been carried out on the effects of preschooling in these countries suggests they are modest but positive in terms of both reducing dropout rates in primary school and improving academic performance. At the same time it has been noted that these effects can soon be undermined by poorly run and resourced primary schools. A World Bank policy review concluded that "Preschool experience plays a role in early school progress but only within a limited range. In many areas, preschool intervention may be of marginal value if primary schools are not improved", (Lockheed and Verspoor, 1990).

4.4 In the Caribbean, preschooling is attempting to fulfill a multiplicity of functions. It has to provide day-care facilities for families, especially those headed by single, working women. In addition, the centers act as foci for intervention by health and social services organizations, particularly for the disadvantaged. Emphasis is on social and emotional development and the facilitation of motor and cognitive skills to enable a smooth transition from home to school. Finally, in some countries, the preschooling organizations help parents develop a more enlightened approach to parenting their children, perhaps the most critical intervention of all.

Coverage and Access

4.5 While definitions of what constitutes day-care and preschool provision may vary between countries, the most comprehensive set of enrollment estimates has been prepared for the Caribbean Child Development Centre (CCDC) and is presented in Table 4.1 (Brown 1988). The division of enrollments into 0-4 years and 4-6 years age groups is a little problematic since several countries begin primary school at five years, which results in the 4-6 years ratios being underestimated. However, it is evident that preschooling is very widespread, with enrollments significantly above average for middle income countries. No corresponding data exist comparing urban and rural coverage, though there is some evidence that the former is greater. The CDCC survey reports 26 urban and 18 rural centers in St. Lucia. Likewise, in Guyana 46 percent of preschool enrollments are in urban areas compared to 41 percent of primary enrollments.

Table 4.1: CARIBBEAN - PROPORTION OF AGE-GROUP ENROLLED IN DAY-CARE AND PRESCHOOL, SELECTED COUNTRIES (in percent)

Country	0-4 years	4-6 years
Antigua	11	27
Dominica	25	46
Grenada	26	100
St. Kitts	15	30
St. Vincent	5	58
Guyana	15	52
Jamaica	15	91
Suriname	-	85
St. Lucia	45	100*

* Note: St. Lucia Ministry of Education data for 1991 indicates almost universal coverage of 5 to 6 year-old group.

Source: Brown (1988).
Suriname Ministry of Education.
St. Lucia Ministry of Education.

Quality and Effectiveness

4.6 Preschools have many roles. There is no body of research to demonstrate how effectively they play them. As childcare providers and, in some countries such as Jamaica, access points for nutritional subsidies, they are presumably effective, although the CCDC survey points to a lack of coordination among education, health and welfare authorities at the preschool level. There is no solid quantitative evidence on the comparative educational performance of children who attend preschools and those who do not. The nearest to such evidence are the results from Jamaica's Grade 1 Readiness Inventory, which consists of nine tests of cognitive and psychomotor skills. Mastery of these skills is assumed in the first grade curriculum. The results of the 1989 tests are described in Table 4.2. For seven of the nine skills only half of entering first grade students have mastery. In the other two the percentages are 27 and 68. If the measure "near mastery" is added in, this still leaves one-third of the intake having "no mastery" of each skill. Of the nine skills, half of the students have mastered four or less. Since almost 80 percent of all 3- to 5-year-olds in Jamaica attend some form of preschool education, these results are disappointing from the perspective of achievements in cognitive development.

4.7 The average scores for each test mask differences in Jamaica by sub-groups. Table 4.2 clearly shows that girls perform better than boys on every test. While similar proportions of preschoolers pass five or more tests in different geographical locations in the country, those who manage to pass only two or less are much greater in rural areas (32 percent) than in, for instance, Kingston (24 percent). Obviously a large percentage of boys in rural areas begin primary school with little of the preparation which is assumed by the curriculum.

Table 4.2: JAMAICA - FIRST GRADE READINESS INVENTORY, 1989

	Percent showing mastery		
Skill	Male	Female	Overall
Visual Motor Coordination	46	55	50
Visual Discrimination	47	55	51
Visual Memory	48	56	52
Figure-ground Discrimination	48	54	51
Left to Right Orientation	24	29	27
Receptive Language	48	54	51
Listening Comprehension	65	72	68
Number Knowledge	45	51	48
Auditory Discrimination	47	55	51
Average	46	53	50

Source: Hamilton and Associates (1990).

Resources and their Use

4.8 More than any other level of education, preschool tends to rely on private financing. While there are exceptions to this (Guyana), the main ways in which governments support this activity are indirectly via teacher training and through relatively small subsidies. Consequently, the proportion of total recurrent education expenditure spent on preprimary schooling is low in most Caribbean countries. Examples are:

	Percent	Year
Dominica	0.18	(1987)
Grenada	3.40	(1987)
St. Lucia	0.13	(1987)
St. Vincent	0.09	(1986)
Jamaica	2.10	(1989)

4.9 Mainly, then, preschools are privately or community run and financed. Taking Jamaica as an example, of the 130,000 3- to 5-year-old children in preschool, 14 percent are in government institutions, 5 percent in private schools and 81 percent in community operated schools. Fees range widely from US$20 to US$250 a year, depending on the extent of government and other subsidies.

4.10 Until the early 1980s, with the exception of Jamaica, there was little or no preschool teacher training provision in the Region. However, since then, teacher training has been given increased attention in Trinidad and Tobago and Guyana and more recently in other countries with the launching of the Caribbean Teacher Training Program, a regional initiative under the aegis of the Caribbean Life Center of Service Volunteered for All (SERVOL). The Program, which is now in its second phase, and is supported by the Bernard Van Leer Foundation, aims to provide training for upwards of 150 paraprofessional preschool teachers and supervisors across the Region. In addition it has been establishing training centers in other countries: Guyana, St. Lucia, St. Vincent, Grenada, Dominica and Antigua. SERVOL has been mainly training teachers, but is now also training local supervisors and coordinators. In the last two years, the training curriculum has placed emphasis on promoting community involvement and providing training for parents. As of 1991, some 245 individuals, mainly teachers, have received training. An important feature of the program is the field supervision provided to trainee interns by the Caribbean Life Center. While the regional network has thus far limited its activities to training, it might also serve as a resource center for teaching materials, community mobilization, parental involvement and other areas. Plans for sustaining the work of these national centers and supporting a regional clearinghouse and network should be on the agenda of government and private groups.

4.11 While the training centers have increased overall access to training, financial constraints and inability to obtain release from teaching responsibilities for training still pose problems in some countries. The CCDC survey reported that the proportion of supervisory and teaching staff with no formal training ranged from 25-75 percent. Similar percentages were cited for "inadequately" trained. For example, Guyana, which has the highest level of government participation in preschool education and in-country teacher training, has only 42 percent of its nursery teachers trained. Teacher supply itself is also a problem. Wages/salaries for preschool and day-care center supervisors/teachers are well below those in the primary school system (sometimes less than half). Because much of the provision is privately run, few staff have the security of tenure or pension rights. Many move to better-paid employment when the opportunity arises; as a result staff turnover is high.

4.12 With respect to curricula, countries have access to comprehensive packages developed by Jamaica's Project for Early Childhood Education (PECE) at the end of the 1960s and early 1970s. This Basic Schools curriculum has comprised the basis for early childhood education programs in much of the Caribbean. In the Jamaican Development Plan 1990-95, the Government proposes as a first priority to revise the PECE curriculum guides for 3-year-olds and modify the existing ones for 4- and 5-year-olds. Curricula at this level tend to emphasize social and emotional development as much as the formation of functional skills. This is often at odds with parents' perception that the role of preschools is basically to provide introductory literacy and numeracy skills.

Redefining the Role of Government

4.13 Over the past decade, governments in the English speaking Caribbean have made considerable progress in increasing access to preschool education. Most have a stated policy that they wish to increase access further. Simultaneously, an increase in the quality of preschooling is required. In most countries, government funds have concentrated largely on providing centrally located managerial and administrative support and, occasionally, in-service training for supervisors and teachers. It is unlikely that in the next decade governments will be in a position to significantly increase their financial contribution to this subsector. As a consequence, private and community resources will have to continue to play a substantial role in supporting the operations of preschool programs. A key consideration will be to decide which limited interventions by government will have most effect. There are four main areas of policy interest in defining an appropriate government role: ensuring and improving quality, expanding enrollments, containing unit costs, and mobilizing additional resources.

4.14 Ensuring and Improving Quality. During the 1980s, increased numbers of preschool teachers received full-time training. This approach tends to be expensive, since it requires paying for substitute staff and produces an anticipation of salary increases on completion. As a consequence, there has been a shift in countries (Jamaica, St. Vincent and St. Lucia) to more in-service, on the job training. This approach could be supplemented by "refresher" programs mounted by organizations such as SERVOL and local teachers colleges. More in-service training is one way of increasing teacher morale in the absence of increased salaries. Jamaica is setting an excellent example through its nationwide network of community-based resource centers for basic schools, which serves as the main source of in-service and on-going teacher support (see Box 1). Parents and communities are the greatest supporters of the basic schools, and churches, banks and other business establishments and service clubs also adopt and assist them. Parent involvement is a centerpiece of the Head Start program described earlier, and the feature widely regarded as responsible for the attitudinal successes of the program. Greater involvement of unpaid voluntary workers, particularly parents, could also help teachers while reducing the current overall teacher/child ratio from 1:25 to 1:15 as proposed by the CCDC.

4.15 When funds are scarce, provision of instructional materials is one of the first areas to be cut. At the preschool level, exposure to a wide range of visual, auditory and tactile learning supports is crucial. Teachers and parents, once trained, can, of course, make much of this material inexpensively. Many preschools lack basic physical requirements such as ventilation and sanitation. Minimum standards need to be set by ministries and private organizations as a condition of support. The "recognition" system for basic schools in Jamaica, which sets minimum facility standards as a base for Government subsidy, is an example of how this can work effectively. The SERVOL network of preschools in Trinidad, where at the outset the local community accepts the responsibility for physical maintenance, is another good model.

4.16 One of the roles of preschools in the Caribbean (as described above) is to serve as centers for social and health care interventions, and for providing health education to parents. Protein-energy malnutrition is prevalent among 0-4 year olds in many countries, with children from low-income families being most vulnerable. Malnutrition and frequent sickness undermine preschool Sattendance and achievement. Health, nutrition and preschooling do not normally fall under one ministry, and collaborative efforts between responsible ministries are often limited. National preschool organizations can provide a natural focus for coordinating basic education and health services of various child care networks. Alternatively, a school-welfare desk might be established within the education ministry, as in Grenada. Preschools and primary schools in the Caribbean have expanded school feeding programs in recent years. More surveys and monitoring are required to target students at the greatest nutritional risk. A good example of this approach is the school-feeding program for preschools operated through PACE in Jamaica.

4.17 Expanding Enrollments. Caribbean governments encouraged the expansion of preschool places in the 1980s and are committed to further growth, particularly where inequities exist among rural and low income families. One possible avenue for expansion would be to encourage the formation of loose, informal play groups in private homes for the 0-3 year olds, thereby releasing formal preschool places for older children. This approach uses a "childcare model" in which the parent is trained to play a key role in the child's psychomotor and cognitive development. From another angle, in several countries primary school enrollments are falling. Over time this could release teaching space and staff for preschool work. Currently, in some of the smaller islands, staff/student ratios are as low as 1:12 and there may already be scope for such reorganization. Given the results of the Jamaican tests on first grade primary pupils, it is important that children who are unlikely to receive stimulation for

Box 1 - TEACHER TRAINING AND SUPPORT SYSTEM FOR JAMAICA'S BASIC SCHOOLS

Jamaica's Basic School training and support structure for its 3,100 Basic School teachers is the only one of its kind in the Caribbean region. This major achievement, similar to the country's Primary School training and support structure, provides a good model for other Caribbean countries wishing to upgrade their preschool programs.

Jamaica's Basic Schools are community-organized low cost pre-schools targeting the country's poorest children. Currently, 1500 Basic Schools operate, educating some 112,000 children annually who represent about 75% of all children between the ages of 4 and 6. The schools are run by paraprofessional teachers from the community who are each responsible for an average of 37 children between 4- and 6-year-old. Facilities are generally poor and often lack children's play or learning equipment.

Since the early 1970s, Jamaica has concentrated on pre-school teacher training, attempting to make it highly practical and adaptable to the skill needs of teachers who, although motivated, have modest formal education. In the early 1970s, the Bernard van Leer Foundation (BVLF) launched a pilot Project for Early Childhood Education (PECE) which began by emphasizing training designed to both stimulate teacher creativity and help teachers foster child creativity. The project also taught teachers about child development so that they might better foster early learning. Finally, it taught teachers how to develop lesson plans and elaborate their own teaching materials. This successful project expanded nationally to become the island's Early Childhood Program.

In 1976, Jamaica began establishing Basic School Resource Centres to house books and other teaching/learning materials. By 1983, all parishes had Resource Centres, for a total of 16, with specialized training. These staffs, called Resource Centre Officers (RCOs), are responsible for: (a) Centre management; (b) enriching and tailoring curriculum for schools; (c) developing learning aids; (d) determining means for providing children's welfare assistance and incorporating parents and community members as school system resources; (e) introducing training modules as teacher training workshop assistants; and (f) Basic School supervision.

Program for the Advancement of Childhood Education (PACE - 1987-1992)

During the mid-1980s, the Government of Jamaica (GOJ) and BVLF sought new ways to improve the quality and expand the scope of the Basic School teacher training and support system. In 1985, at a Main Resource Centre Unit attached to a Basic School, GOJ/BVLF piloted a 3-year RCO training model. This model equips RCOs with "hands-on" techniques for comprehensive early childhood education (ECE), later imparted to teachers. They are familiarized with the major ECE principles: (a) attending to children's general needs; (b) focusing on concrete experiences; (c) creating opportunities for enquiry and creativity; and (d) fostering reading and writing readiness skills. The model also seeks to change teaching styles, emphasizing: reduced directiveness, an informal teaching atmosphere, child to child interaction, and mobilization of, and eventual shared responsibility with, community members for Basic School functioning.

Most Basic School facilities were in a state of disrepair prior to the introduction of PACE. GOJ and private and public sector organizations have overseen the repair and expansion of over 800 schools.

In-service training of Basic School teachers forms an essential part of the system. The Basic Schools Program provides continuous on-site training and monthly workshops at strategic sites within zones. The island is divided into 48 instructional zones with a teacher trainer in charge of each, responsible for approximately 30 schools. There is also a one year intra-mural type training program at Passley Garden Teacher Training College for 50 teachers per year for six years, from 1988-1993 supported by BVLF. A six summer B Ed project at UWI, now in its sixth year, seeks to enhance ECE teacher training competence. Participants are principally Teacher Trainers and RCOs. In time, the system will need to adopt policies on pre-school training and accreditation or certification.

psychomotor and cognitive development in the home, in particular, should have access to preschool places. This may require subsidization of fees and school meals. Any actions of this type will require strict targeting to ensure affordability.

4.18 The urgent need to expand early childhood education and reach all 4-4- to 6-year-olds should be tempered by the recognition that going up from small to large scale might undermine important program principles. An effective scaling-up model should leave intact the already proven principles and approaches of community-based early childhood education in terms of teaching/learning concepts and methodologies, curriculum development, and training and support systems. It should also continue to be supported primarily by contributions from users and the communities. The scaling-up experiences of Jamaica and Trinidad and other countries need to be studied and lessons learned to guide future program development.

4.19 Containing Unit Costs. The major component of preschool costs is teacher salaries. As preservice training has become institutionalized, preschool teacher salaries have begun to inch up towards those of primary school teachers. A careful balance needs to be struck between training, related salary costs and gains in quality. If expansion is to be sustained, measures to enlist voluntary help from retired older teachers, parents of the children attending preschools, and/or older pupils in secondary schools and tertiary colleges could be considered. Two other ways to reduce unit costs might be to increase the average class size of teachers and to reduce the number of classes attended by children each year. Teaching loads could be increased by altering the number of classes taught per week or the number of classes in the school year. This would require some kind of "double shift" system which could be especially appropriate at preschool levels where children's concentration is short. However, the scheme would need to be balanced against other factors such as working parents, particularly single heads of household, needing childcare until they finish work.

4.20 Mobilizing Additional Resources. The preschool system across the Caribbean is characterized by a strong public/private sector partnership. Private financing is mainly from individual parents. In addition, aid organizations such as the Bernard Van Leer Foundation, UNICEF, and World Food Programme have provided considerable support. Such external funding agencies can be helpful in initiating and developing preschool programs where these do not exist. Also they are prepared to invest in research and public education campaigns. However, basic costs for teacher training, materials, and equipment for preschool education have to be picked up by government and private groups. If preschool provision is to be expanded, additional spending will be required. Given the present budgetary constraints for Caribbean governments, it is unlikely they will be able to afford more. Nor is it necessarily desirable, since increased public expenditure may discourage individual private financing.

4.21 Various measures can be used to mobilize additional resources for preschool education. The most important is fees and other monetary levies, which could be introduced or increased. To enable the most disadvantaged children to attend preschool, fees could be on a sliding scale according to parents' ability to pay. Parents might also wish to make payments in kind: acting as an unpaid teacher or teacher aide, supervising the school-feeding program or preparing meals, helping to maintain the school premises, or making educational toys and games for the school. These kinds of inputs have the additional advantage of involving parents and the community in the school, which is important to children at the difficult transition stage from home to school. However, parents who can afford fees should also be strongly encouraged to actively participate in their child's preschool.

B. Primary Schooling

4.22 Primary schooling is meant to achieve a number of personal, educational, social, political and economic objectives. These were outlined in Chapter III. To reach many of these objectives--such as greater economic productivity, lower fertility and improvement of health and nutrition practices--requires the development of various dimensions of cognitive competence: literacy (reading and writing), numeracy and problem-solving. These skills directly affect productive behavior and also increase the individual's ability to utilize the products of technological change. They also tend to increase the ability to observe, diagnose and correct a variety of situations and to be receptive to new ideas in general. Until each country has a primary school system with a coverage and quality which enables the vast majority of children to develop these basic but essential skills, it is unlikely that either efficiency or equity considerations will justify expansion of other parts of the educational system.

4.23 Primary schooling in developing countries has come under increasing scrutiny in recent years. As its importance has been increasingly stressed so have its shortcomings. Criticisms have focused on the common inefficiency with which schools transfer a first-year student through the full primary cycle and the often low quality of the learning process. Fewer than 60 percent of those who enter school in all low income countries and 70 percent in all lower middle income countries reach the final year of the primary cycle. Repetition rates are on average five times higher in lower middle income countries than in high income ones. Evidence of low primary school quality in many developing countries comes from low achievement rates in nationally administered tests as well as from cross-national comparisons, as administered by the International Association for the Evaluation of Educational Achievement (IEA) since the early 1960s. In the latter, the average scores for low and lower middle income countries have been 30 percent below the average for high income countries in reading comprehension, 33 percent below in arithmetic, and 58 percent below in general science (Lockheed and Verspoor, 1990). It is in this context that primary schooling in the Caribbean is discussed below.

Coverage and Access

4.24 The demand for primary schooling by Caribbean people has been strong over a long period of time. In 1900, British Caribbean colonies had primary enrollment rates higher than in all countries of the world apart from nine Western European countries, the United States, Canada, Australia and New Zealand (Benavot and Riddle 1988, quoted in Miller, 1989). The rates continued to increase. In Jamaica, primary school enrollments as a percentage of the corresponding age group expanded from 51 percent in 1920 to 85 percent in 1970. Since the last round of censuses were conducted in the region in 1980, the exact current resident populations at each age are not known precisely, and therefore all present enrollment ratios are estimates. Most recent estimates are given in column 8 of Table 4.3. Apart from Haiti, any ratios below 100 are more likely to reflect inaccuracies in the size of the age group than non-enrollment. As a working assumption, primary schooling can be regarded as near universal and has been for over a decade in several of the larger countries, i.e. Jamaica, Trinidad, Guyana and Barbados. In Haiti, however, despite recent rapid growth, only around 50 percent of 6- to 11-year-olds are in school. Table 4.3 also presents actual enrollments over the period 1980 to 1988 for most Caribbean countries. In 9 of the 15 countries listed, enrollments were lower in 1988 than in 1980. In some cases, such as Barbados, the 1980 enrollments were themselves lower than in 1970. This reflects both falling fertility levels and emigration (described more fully in Chapter I). The reductions in enrollments are confined to some English-speaking countries for which the overall annual growth rate was 0.26 percent. This compares to an annual growth of 1.7 percent in the Dominican Republic and a huge 8.4 percent in Haiti. Much of the growth in primary enrollments in Haiti has come from within the non-governmental sector. Table 4.4, which concentrates on enrollment growth and ratios since 1965 in the four most highly populated countries (Haiti, the Dominican Republic, Jamaica and Trinidad), clearly demonstrates the different patterns of growth.

Table 4.3: CARIBBEAN - PRIMARY SCHOOL ENROLLMENTS 1980/81-1988/89

Country	1980 (1)	1984 (2)	1985 (3)	1986 (4)	1987 (5)	1988 (6)	Annual Average Percent Change (7)	Enrollments as Percent of Primary Age Group (8)
Antigua	...	...	9,072	9,087	9,097	8,250	- 2.3	115
The Bahamas	37,399	37,301	37,181	36,003	36,336	35,691	- 0.6	100
Barbados	36,786	36,295	32,908	31,599	30,562	31,100	- 1.9	110
Belize	34,615	37,753	38,512	39,212	39,779	41,586	2.4	95
Dominica	...	13,262	12,861	12,340	12,381	12,205	- 2.0	90
Grenada	12,650	12,008	11,854	11,834	11,861	11,890	- 0.8	100
Guyana	...	126,372	117,211	...	112,581	118,215	- 1.6	90
Jamaica	350,000	346,200	340,053	341,596	343,763	339,163	- 0.4	106
St.Kitts	7,666	6,510	6,468	6,674	7,675	7,473	- 0.3	78
St.Lucia	30,391	32,383	32,273	32,400	32,825	32,649	0.9	94
St.Vincent	24,158	24,651	24,755	24,561	24,521	24,605	0.2	86
Trinidad	155,155	160,675	162,391	166,152	171,509	179,497	2.0	95
Dominican Rep.	908,591	949,444	926,317	1,055,491	1,030,245	1,032,055	1.7	133
Haiti	580,127	783,000	819,600	872,500	921,500	...	8.4	79
Suriname	74,538	71,454	69,963	59,633	62,271	65,978	- 2.2	84

Source: Columns 1-7: Caribbean Development Bank (1990); Commonwealth Secretariat (1990b); Dominica Ministry of Education and Sports (1989); Suriname Ministry of Education; Inter-American Development Bank (1989); World Bank appraisal reports.
Column 8: Commonwealth Secretariat (1990a); World Bank (1990c); UNECLA (1988)

Table 4.4: HAITI, DOMINICAN REPUBLIC, JAMAICA, AND TRINIDAD - PRIMARY ENROLLMENT GROWTH AND RATIOS 1965-85 (percent)

Measure	Year	Haiti	Dominican Rep.	Jamaica	Trinidad
Average annual enrollment growth	1965-75	5.5	5.0	3.5	-0.6
	1975-80	5.7	4.0	-0.7	-3.4
	1980-85	6.3	2.0	-0.8	0.1
6-11 year olds enrolled in primary as a % of all 6-11 year olds	1965	30	73	89	105
	1975	39	86	90	90
	1985	55	107	99	89
Gross enrollment rates	1965	48	87	109	98
	1975	62	102	98	105
	1985	95	126	106	95

Source: Lockheed and Verspoor (1990).

4.25 Apart from small pockets of mainly rural children, access to some form of primary schooling is not an issue in the Caribbean, except in Haiti. Universal access to a place in a primary school, however, does not necessarily imply equity among all children. The resources used in one school may differ substantially from those used in another. In practice, however, the variations in unit costs, at least between public schools, do not appear to be wide. Where they exist it is more a result of rural schools having more favorable teacher/pupil ratios due to the wide geographical spread of the population. For instance, in Jamaica the ratios are 1:45 in urban areas, 1:38 in rural areas, and 1:34 in remote areas. More detailed surveys, however, do point to differences across schools. The school mapping exercise of one parish in Jamaica in 1984 is illustrative (Jamaica Ministry of Education, 1989). Of the 70 primary and all-age schools, the percentages having the following facilities were:

electricity	79	radio	34	duplicator	36
piped water	39	tape recorder	30	TV set	40
library	49				

Only 16 percent of classrooms were described as being in good condition, and 37 percent were described as bad or very bad. Of the pupils, 41 percent were said to have access to all textbooks, 54 percent access some, and only 6 percent none. Eleven percent were without pens or pencils and eight percent without exercise books. All these data relate to the parish level. Between zones within the parish the ranges can be quite wide. For instance, while 41 percent of all pupils in the surveyed parish were said to have access to all textbooks, this varied between 28 and 65 percent across zones.

4.26 The situation described above in Jamaica is likely to correspond to that in other countries. Although the mapping exercise in Jamaica did not link the provision of materials and facilities to levels of educational achievement, these also vary considerably across schools. In Grenada in 1990, for instance, out of 49 public primary schools, 14 had common entrance pass rates below 30 percent, and 12 above 60 percent. Why these variations exist and to what extent they are related to pupils' access to different levels of resourcing remains an underresearched issue across the Region.

4.27 Primary-age children not well catered for in the Region are those with special needs, particularly the handicapped and those with learning disabilities. These tend to be placed in normal schools--but without the special teachers and programs required for their screening or support. Several government reports on primary schooling give emphasis to this issue.

Quality and Effectiveness

4.28 For most Caribbean countries, the central educational issues at the primary school level are the efficiency and effectiveness of schools in increasing children's knowledge and skills and preparing them for later life. In particular, some minimum proficiency in literacy and numeracy should be reached by every child. How successfully are schools achieving the pedagogic objectives which have been set? How effectively are children being taught? Two types of data are used in this section. If attendance rates are low and repetition and dropout rates high, then it is unlikely that effective learning is occurring. These data are presented as proxy measures of effectiveness, where available. The second set of measures encompasses the results of achievement tests. All of the English-speaking countries (apart from St. Kitts) administer common entrance examinations at the end of the primary schooling cycle. Those who pass on the whole then enter secondary high schools, which teach a curriculum focused on the CXC examinations, while those who fail remain in the all-age primary schools, or enter other types of post-primary institutions. Since the pass rate in the common entrance in each country is determined largely by the number of secondary high school places, no indication of schooling quality can be implied from these examinations. Some cautious use can be made, however, of the scores achieved in a given country, particularly for comparisons of academic performance between males and females, and between schools. Only in Jamaica and St. Kitts has there been extensive testing of cognitive skills; however, there are scattered pieces of similar information for some other countries. Three provisos are required concerning both sets of measures. First, the amount and quality of data differ markedly between countries. Second, only in a few cases are data available over time from which trends can be discerned. Third, the nature and legitimacy of several tests for which the results are presented may be subject to disagreement. Indeed valid indicators of academic performance are one of the several areas of severe education data deficiency in the Caribbean, which deserve serious attention. Notwithstanding these limitations, a broad picture of the effectiveness of primary schooling across the Caribbean is attempted below.

Country Experiences

4.29 Barbados. The education system in Barbados is widely regarded as one of the most effective in the Region. However, concern is currently being expressed over recent trends. "One of these trends has been the apparent deterioration in reading achievement among primary and secondary school children" (Commonwealth Secretariat, 1990b). Data also indicate that girls do better than boys on both English and mathematics tests.

4.30 Belize. Primary school enrollment is 95 percent. Repetition is negligible; dropouts are 20 percent of enrollment. About 50 percent of students at the primary level gain access to some type of secondary schooling, and 35 percent complete their secondary education. The government is placing emphasis on improving the quality of primary schooling through a comprehensive program of teacher training, curriculum reforms and periodic national assessments of student achievement.

4.31 Dominica. Total primary school enrollment in Dominica has declined by 10 percent since 1984, while first grade enrollments have increased by 25 percent. This suggests substantial rates of repetition. Around 6 percent of total enrollments are repeaters. As elsewhere, girls outperform boys on academic testing. In 1988, 64 percent more girls than boys passed the common entrance examination. A recent analysis of items in the mathematics component of the CXC comparing 1989 to 1982 indicates that an improvement has taken place. However, "notwithstanding the improvements, the overall standard is low" (Goldberg, no date).

4.32 Dominican Republic. As a result of high repetition and dropout of every 1,000 children who begin primary school, only 411 can expect to complete fourth grade, and 345 to finish sixth grade in the regular time frame. Repetition and dropout rates are higher in rural than urban areas: 18 and 12 percent, versus 15 and 9 percent a year, respectively. Although no systematic nationwide achievement tests have been conducted, the results of occasional testing indicate that the quality of schooling is among the lowest in the Region. A recent assessment of mathematics scores of eighth grade students produced very poor results (27.3 percent average).

4.33 Grenada. Both repetition and dropout rates are relatively low according to cohort survival ratios calculated by the CDB Technical and Vocational Education Project (Caribbean Development Bank, 1990b). Data on attendance for 1986 show an average of 77 percent across schools. Although no data exist on the absolute level of primary school quality, the pass rates in the common entrance examination across schools vary substantially as Table 4.5 shows. They also vary by gender. Of the male candidates, 36 percent passed compared to 58 percent of the female candidates.

Table 4.5: GRENADA - DISTRIBUTION OF AVERAGE SCORES ON THE COMMON ENTRANCE EXAMINATION BY SCHOOL, 1990 (percent)

Average Score	<20	21-30	31-40	41-60	61-70	>70	Total
Number of Schools	4	10	13	15	9	12	63

Source: Grenada Ministry of Education (1990).

4.34 Guyana. While official statistics indicate primary school enrollments cover 94 percent of the age group, the attendance level is currently 68 percent nationally and falls to 51 percent in one of the country's regions. Over 11 percent of first grade enrollments are repeaters. Dropout rates range from 3.2 percent in the first grade to 7.8 percent in the final grade. School efficiency (under very difficult circumstances) is low. The effectiveness of schooling appears to be similarly low. Mean scores from the secondary schools entrance examination, taken at the end of primary school from selected years between 1980 and 1990 are reproduced in Table 4.6. As indicators of trends in quality, these scores should be viewed with caution. The tests are not criterion referenced and may vary in difficulty each year. Further, they are constructed in such a way as to depress the mean scores. Even after recognizing these characteristics, however, the overall performance appears poor. A random score on each test would be 12.0. After six years of primary schooling, half of the students are able to successfully answer less than one-third of the items.

Table 4.6: GUYANA - SECONDARY SCHOOL ENTRANCE EXAMINATION RESULTS, 1980-90

	Mean Scores (maximum 60)				
Subject	1980	1984	1987	1989	1990
Mathematics	19.3	13.2	18.0	17.0	17.6
English	20.1	17.4	18.0	21.0	19.3
Science	26.5	17.8	20.0	17.0	20.5
Social Science	23.3	18.1	20.0	19.5	19.0

Note: The standard deviations range between 8 and 10.
Source: Ministry of Education annual reports.

4.35 Haiti. This country stands out in the Region for the low level of primary school enrollments. In addition, both repetition and dropout rates are very high. Just over half the children in school are over-aged by three years or more, and only 52 percent of urban children and 34 percent of rural children complete the first four-year primary school cycle. The overall effect is that to produce one sixth grade graduate requires 12-15 years of schooling in public schools, and between 8 to 15 years in the various types of private schools.

4.36 Jamaica. In addition to the high enrollment ratios, primary dropout rates in Jamaica are said to be low. However, while repeaters constitute around 9 percent of total enrollments--higher for boys than girls--the most negative measure of school efficiency is the low attendance rate. For the country as a whole, the attendance rate is around 70 percent, falling to below 50 percent in some rural areas. Attendance also varies greatly according to different days in the week. Evidence on primary school achievement is more extensive for Jamaica than for any other country in the Caribbean. This results mainly from a National Assessment Programme which conducted its first tests in 1988. The Sixth Grade Achievement Test covered mathematics, language arts, social studies and science tests. Overall scores are shown in Table 4.7. Unless the tests have been set at an unreasonably high standard, the results are poor. In Jamaica, functional literacy is defined as reading with comprehension at a fourth grade level. Based on this definition, the tests indicated that 31 percent of primary graduates were illiterate. This result is very close to that obtained by Myers in similar tests (CIDA/CODE 1989). In the 1989 tests, the functional illiteracy rate increased to 48 percent (Hamilton and Associates, 1990).

Table 4.7: JAMAICA - SIXTH GRADE ACHIEVEMENT TEST RESULTS, 1988

Subject	Average Correct Scores (percent)
Mathematics	36
Science	39
Social Studies	36
Language Arts	41

Source: Blank (1989)

4.37 Myers' work also demonstrates wide variations in levels of functional illiteracy by gender, school type and location, as shown in Table 4.8. The range is from 11 percent for girls in city all-age schools to 63 percent for boys in remote rural areas. It is interesting to note, however, that in the sixth grade science tests, rural boys scored the highest marks.

Table 4.8: JAMAICA - FUNCTIONAL ILLITERACY BY SCHOOL TYPE, GENDER AND LOCATION, 1989 (percent)

School Type and Location	Male	Female
City Primary	31	15
City All-age	44	11
Town Primary	35	17
Town All-age	41	25
Rural Primary	52	24
Rural All-age	58	34
Remote Rural All-age	63	37

Source: Myers in Watson (1990).

4.38 In addition to the results from these national tests there are several other pieces of evidence suggesting low levels of primary school achievement in Jamaica. For instance, in a survey by teachers from new secondary schools in 1984, 48 percent of entrants were regarded as reading below the level required. More recently, an evaluation of a program to produce materials for poor readers in the first year of post-primary schooling concluded that 68 percent of children in the schools surveyed were reading at grade 3 level and below (Jennings and Craig, 1990). Whether the quality of primary schooling has been declining over time is strongly debated in Jamaica (Miller 1989, Craig 1990). What is not contested is that the quality is low.

4.39 St. Lucia. In 1984 the structure of the common entrance examination was modified from simple multiple choice to include an essay paper in English and a problem paper in mathematics. Over 700 of the 3,500 candidates scored zero on this part of the English paper and the results of the mathematics paper are said to have been even more depressing (Commonwealth Secretariat, 1990b). Once again, girls' average test scores exceeded those of boys in primary schooling. Of the common entrance successes in 1989, 59 percent were girls.

4.40 St. Vincent. Repetition rates are high in St. Vincent resulting in an age span of 5 years or more among pupils in the same school year from grade 3 upwards. In 1984, just over 4,000 pupils were registered in the first junior primary grade. Five years later, enrollment in the appropriate class was 3,058. Once again, girls take 60 percent of secondary school places, based on examination results.

4.41 Trinidad and Tobago. While actual dropout rates are low, i.e., around 4 percent, the high level of repeaters indicates some substantial learning problems, although the higher rates in the final years of primary school partially reflect "voluntary" repetition in an effort to attain higher common entrance performance (Table 4.9). While the common entrance results cannot be used to indicate levels or trends in quality, they do demonstrate major differences in success rates according to school location. While candidates in two of the eight administrative areas had pass rates in 1987 of 89 and 92 percent, two other areas had rates of only 39 and 43 percent. Some indirect evidence of quality is available from tests administered to the 16- to 25-year old entrants to the SERVOL skills training program: "About 5 percent cannot read at all, 10 percent can read a few words, 25 percent can read a sentence and only eight percent can read a simple book", (Ellis, 1987). Of the trainees accepted in 1987, 1988 and 1990, the percentages with very poor literary skills were 24, 28 and 32 percent, respectively. While the majority were dropouts from the secondary schools system, the results must reflect in part some of the quality of the primary school base.

Table 4.9: TRINIDAD - PRIMARY SCHOOL REPEATERS
BY GRADE AND GENDER 1986/87 (percent)

Gender	Std 1	2	3	4	5	6	7
Male	1.9	2.1	2.2	4.5	11.7	15.1	23.1
Female	1.0	0.6	1.1	3.9	15.2	14.3	19.4

Source: Trinidad Ministry of Education (no date).

4.42 Repetition/Attendance/Dropouts. The situation in Haiti and the Dominican Republic appears to be much worse than in English-speaking countries, as Table 4.10 demonstrates. The data show even distributions of enrollments across primary school classes and relatively low repeaters in both Jamaica and rinidad. In Haiti and the Dominican Republic, however, enrollments fall substantially and repeater levels are two to three times as high. Apparently only one-third of primary school entrants in Haiti complete the cycle.

Table 4.10: HAITI, DOMINICAN REPUBLIC, JAMAICA AND TRINIDAD
INDICATORS OF PRIMARY SCHOOL EFFICIENCY

		Haiti	Dominican Rep.	Jamaica	Trinidad
Percent Distribution of Primary Enrollments:	Grade 1	41	35	21	21
	" 2	20	19	20	21
	" 3	16	17	20	20
	" 4	13	15	20	19
	" 5	10	14	19	19
Repeaters as a Percent of Total Enrollments	1980	21	18	4	4
	1985	10	13	4	5
Percent of Primary Intake Reaching Terminal Grade	1975	-	-	75	-
	1985	32	-	-	-

Source: Lockheed and Verspoor (1990).

4.43 In summary, as the above data highlight, many countries in the Caribbean Region experience high rates of grade repetition. While the dropout rates in English-speaking countries appear to be low, in some countries, particularly the Dominican Republic and Haiti, school desertion also is high. The usual argument in favor of repetition is that it is preferable to make a low-achieving child repeat a class to ensure that all material in that grade is mastered, rather than allowing the child to proceed to the next grade. However, repetition has many disadvantages. It encourages dropout, as the repeating child may become demoralized, particularly as he/she inevitably must repeat some material already mastered. Further, his parents may decide that the opportunity costs of schooling are too great. Repetition also is costly in that repeaters clog the system, and place additional strain on school resources. Moreover, evidence is accumulating that multigrade teaching, coupled with more flexible promotion policies, have a more positive effect on learning outcomes than holding children back in grade. In fact, a recent study in Colombia of the Escuela Nueva schools, which feature multigrade teaching and promotion to the next grade once a student has achieved minimum educational objectives (as is the case for the great majority of students), showed a negative correlation between repetition and achievement[1]. Similar results were found in a study of rural schools in North East Brazil[2]. Positive academic results also have been experienced by most OECD countries, where grade repetition is the exception and teaching of varying achievement levels within the same class the norm. These experiences strongly suggest that investments in multigrade teaching materials and related teacher training, coupled with flexible promotion policies which promote children except in rare cases, could have a high rate of return in terms of improved internal efficiency, improved learning, and reduced dropouts. Thus, all Caribbean countries should consider adoption of policies to minimize grade repetition.

4.44 High rates of absenteeism also adversely impact on efficiency and effectiveness of education. If the Jamaican and Guyanese (and to a lesser extent Grenadian) experiences can be generalized, low attendance rates are a problem, particularly when they act as a constraint on teachers to introduce new material. Average attendance rates of only 50 percent in some areas cannot be educationally beneficial, even for those who attend.

4.45 The Caribbean faces two broad sets of issues regarding the quality of primary schooling. First, albeit admittedly scanty, existing quantitative data suggest that quality is low throughout the Region, particularly in the areas of reading, writing and numeracy. While these are not the only objectives of primary schooling, they are very important ones both for ensuring youth's full integration into contemporary society and for providing a base for secondary schooling.

4.46 The second quality issue is the wide differential in levels of achievement gained by children according to their location and gender. Throughout the Region, rural children perform poorly on tests relative to urban children, and girls tend to score higher than boys. Common entrance examination pass rates across the Region show much higher success for girls.

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[1] G. Psacharopoulos, C. Rojas and E. Velez. "Achievement Evaluation of Colombia's Escuela Nueva: Is Multigrade the Answer?" Paper presented to the CIES Annual Conference, March 1992.

[2] Gomes-Neto and Hanushek. "The Causes and Effects of Grade Repetition. Rochester Center for Economic Research", World Bank Staff Working Paper, No. 295, Washington, D.C.: World Bank, August, 1991.

Resources and Resource Use

4.47 Total Expenditures. Data on public education expenditures as a whole and on primary education were presented in Chapter II. In the OECS countries, unit primary costs average around US$ 220. In the larger English-speaking countries the range is from US$26 in Guyana to US$672 in Barbados. In Haiti and the Dominican Republic, unit costs are US$44 and US$25, respectively. Primary unit costs tend to be between half and three quarters of secondary school costs. As a proportion of total public education expenditure, the range is from 48 to 72 percent in the OECS, from 39 to 66 percent in the larger English-speaking countries, and around 50 to 60 percent in the non-English-speaking countries.

4.48 The data in Table 4.11 outline various aspects of primary education financing in Haiti, the Dominican Republic, Jamaica and Trinidad over the period 1965-85. Trends in the growth of public expenditure have been fairly erratic both within and between countries. Nevertheless, public expenditures as a percentage of GNP are significantly higher in both Jamaica and Trinidad (1.6 and 2.4 percent compared to 0.6 and 0.7 percent in the two non-English-speaking countries) and have been increasing. The levels and trends in unit expenditures demonstrate a similar pattern. While the annual cost per pupil of primary schooling in Haiti fell from 12 percent of GNP in 1965 to 4 percent in 1985 and in the Dominican Republic remained constant, in Jamaica and Trinidad such costs increased from 6 percent to around 15 percent of GNP.

4.49 Expenditures on teaching materials are one component of unit expenditures. Apart from Trinidad, the levels of absolute expenditures on materials are very low (between US$0.20 and US$2), particularly in Haiti. Unit expenditures on primary schooling are dominated by teacher salaries per pupil. Levels of teachers' salaries, however, differ significantly between the English- and non-English-speaking countries, averaging three times per capita income in the former, compared to only 1.3 times in the latter. Primary teacher salaries in the Dominican Republic traditionally were well below the public sector minimum wage. Recently adopted legislation effected an almost 50 percent increase in salary levels. Nevertheless, the majority of teachers earn only US$76 equivalent per month for a standard four-hour shift. Hence, most must work two shifts to obtain a reasonable livelihood from teaching.

Table 4.11: HAITI, THE DOMINICAN REPUBLIC, JAMAICA AND TRINIDAD
TRENDS IN PRIMARY SCHOOL FINANCING, 1965-85

		Haiti	Dom. Republic	Jamaica	Trinidad
Average Annual Growth	1970-75	-2.10	---	8.10	---
of Public Expenditure	1975-80	9.10	3.60	3.10	---
on Primary Schooling	1980-85	-4.00	3.40	-8.40	7.70
Primary Expenditure	1965	64.00	---	37.00	---
as Percent of	1975	63.00	38.00	34.00	---
Total Education Expend.	1985	51.00	47.00	30.00	48.00
Public Expend. on	1965	0.90	---	1.00	1.50
Primary as	1975	0.60	0.70	1.60	---
Percent of GNP	1985	0.60	0.70	1.60	2.40
Unit Cost of Primary Schooling	1975	20.00	24.00	99.00	---
(Constant US$)	1985	14.00	25.00	80.00	1,052.00
Primary Achool	1965	12.00	---	6.00	6.00
Unit Cost as Percent	1975	6.00	4.00	14.00	---
of GNP per capita	1985	4.00	4.00	...	17.00
Expend. in US$ on		0.20	---	2.00	32.70
Teaching Materials (as % GNP per cap.)		0.06	---	0.27	0.52
Pupil/Teacher	1965	46.00	53.00	57.00	38.00
Ratio	1975	41.00	51.00	39.00	31.00
	1985	38.00	44.00	35.00	22.00
Teacher Salary as Multiple Capita GNP		1.40	1.30	3.40	2.90

Source: Lockheed and Verspoor (1990).

4.50 The data and discussion on education financing in Chapter II and the brief reference above to primary school financing in the largest four Caribbean countries, in general, point at best to stationary levels of financing. While these levels are relatively high in countries such as The Bahamas, Barbados and Trinidad, in others such as Guyana, Jamaica and the two non-English-speaking countries, they are low. Again in Chapter II, data on private expenditures were presented. The examples of both Haiti and Jamaica showed that expenditures are relatively high for the Region. Currently in most Caribbean countries, expectations of public and private income growth are limited. In addition to the potential resources released by declining primary school enrollments, in many countries more effective use of existing resources is likely to be the major avenue for financing new initiatives in the immediate future. Identification of possible options available to increase education resource availability requires some initial discussion of existing resource use. Aspects discussed below are pupil/teacher ratios and teacher qualifications, textbook provision and availability, allocation of school time, and the provision of physical and other educational facilities.

4.51 Teachers. Compared to the average primary school pupil/teacher ratios of 29:1 in lower middle income countries and 30:1 in higher middle income countries, the ratios in Caribbean countries tend to be low, particularly in the smaller countries. Recent estimates of pupils per teacher are:

Antigua	20	The Bahamas	24	Dominican Rep.	47
Dominica	25	Barbados	18	Haiti	38
Grenada	26	Belize	26	Suriname	25
St. Lucia	31	Guyana	34		
St. Vincent	18	Jamaica	41		
St. Kitts	25	Trinidad	23		

As noted, the three countries with the highest pupil/teacher ratios are the Dominican Republic (47), Jamaica (41) and Haiti (38).

4.52 The potential benefits to be derived from low pupil/teacher ratios in the OECS countries are somewhat countered by the very low proportions of trained teachers. Table 4.12 outlines the trends in these proportions between 1976 and 1990. While significant advances were made between the mid-1970s and mid-1980s, in every country, apart from St. Lucia, the proportion of trained teachers has fallen since then. Primary school training takes two forms. The first generally involves two years of full-time study, and is for current teachers who are then replaced by young secondary school graduates, who subsequently also must acquire teacher training. The second is in-service, held for both new recruits and qualified teachers. An initial problem in many countries is to replace the teachers being trained with suitably qualified secondary school graduates, since those with the necessary qualifications often have alternative employment opportunities. In effect, underqualified and unsuitable candidates find their way into the classroom.

Table 4.12: CARIBBEAN OECS - PROPORTION OF PRIMARY SCHOOL TEACHERS WHO ARE TRAINED, 1976-90

Country	1976	1984-87	1990
Antigua	59	80	74
Dominica	10	44	43
Grenada	36	47	39
St. Kitts	42	72	64
St. Lucia	28	53	61
St. Vincent	19	36	28

Source: OECS (1991) p. 40.

4.53 Once trained, the numbers leaving teaching are high. In Grenada, an estimated 25 percent leave within the first two years. Turnover is high due to relatively buoyant economic conditions, non-competitive salary levels and narrow salary structures and the poor working conditions in many schools. The latter factors also contribute to a lowering of morale, which is in any case affected by increased levels of education across the population, such that teachers no longer command respect by virtue of their education, as in the past.

4.54 In the larger English speaking countries, the proportion of trained primary teachers is better, ranging from 71 percent in Guyana to 94 percent in Jamaica and Trinidad. In each of these countries, well established systems of teacher training are in place. Despite the combination of relatively high rates of economic growth, together with very low proportions of the population with post-secondary qualifications (as in the OECS), teacher desertion rates are low. However, this does not necessarily mean that morale is high.

4.55 Education Materials. Until 1987, parents of both primary and secondary school children in Trinidad received a book subsidy each year of between US$40 and US$70 per child. More generally, in past years Caribbean governments purchased books from European and regional publishers and supplied them to schools free of charge. Recent fiscal stringency combined with rising costs, shortages of foreign exchange and, in some instances, weakened government distribution systems, have reduced the capacity to continue these practices. At the same time parents' disposable income is extremely limited in several countries. The result has been a decrease in the availability of primary school textbooks in particular, and educational materials in general. For instance, in Guyana only one quarter of primary school textbook requirements are said to be met; a general shortage exists across all OECS countries, reaching 90 percent in some areas (Clare and Sheppard, 1990); and in the Dominican Republic reportedly only 30 percent of pupils have access to textbooks. The very limited amount of educational materials coupled with high proportions of untrained teachers, as occurs in some of the OECS countries, severely impedes learning.

4.56 Recently, some Caribbean countries have taken various initiatives to increase textbook availability. In Jamaica, low cost (US$0.35 each) books on newsprint are provided free of charge with aid donor and private sector support (see Box 2). While this has increased availability dramatically, the viability of continued annual supply is now under scrutiny. In St. Lucia, the government has undertaken a joint venture with a British publisher to develop a national textbook series, using royalties to sustain a local book development unit. Trinidad has moved to local printing under a United Kingdom license and the OECS group is attempting, albeit faltering efforts, to have standardised texts, also printed in Trinidad. Belize has introduced a scheme allowing low-income parents to purchase books at reduced prices. All these initiatives, however, do not alter a general situation of severe underresourcing of educational materials and, often, inadequate levels of access, given dependence on parental income.

4.57 Time Allocation. The allocation of primary school time in Caribbean countries is typical of developing countries. On average, 34 percent of class time is devoted to language arts and 22 percent to mathematics. As in other developing countries, more time is devoted to practical and vocational subjects than in high income countries. In addition to mathematics and English, on average 9 percent of the school timetable is devoted to social studies, 8 percent to science, and the remaining 27 percent to health education, drama, craft, physical education and related activities. As Table 4.13 illustrates, however, there is considerable variation between countries in emphasis around these averages. St. Vincent, St. Lucia and St. Kitts devote more than 40 percent of school time to language arts, compared to just 22 percent in Dominica. Belize devotes more than one quarter of the timetable to mathematics, compared to less than one-fifth in Guyana, St. Kitts and St. Vincent.

Table 4.13: CARIBBEAN - ALLOCATION IN PRIMARY SCHOOLS, SELECTED COUNTRIES, 1982-85 (percent of weekly time)

Country	Language Arts	Maths	Social Studies	Science	Other
Antigua	29	22	14	15	18
Belize	34	28	9	9	20
Dominica	22	22	5	5	46
Grenada	29	20	10	7	34
Guyana	27	12	9	9	43
St. Kitts-Nevis	50	18	5	5	22
St. Lucia	40	20	19	12	9
St. Vincent	51	18	7	9	15
Average	34	22	9	8	27

Note: May not add to 100 percent due to rounding.

Source: UNESCO (1982, 1983, 1984, 1985).

4.58 Moreover, actual distribution of class time in schools does not always accurately reflect the official timetable. In particular, examinations can distort the time allocations in the final year of primary school, and affect the balance of curriculum. In many schools in the English-speaking Caribbean, a higher proportion of time is devoted to the subjects to be tested in the common entrance examination--normally language arts, mathematics, social studies and science--at the expense of other subjects. Adherence to prescribed time allocations is stricter earlier in the primary school cycle.

4.59 Physical Facilities. Both economic recession and adjustment policies have led to reduced levels of capital and maintenance expenditures in government budgets. One area which has been significantly affected is primary schooling. Examples of poor facilities are widespread. The following summarizes the situation in several OECS countries:

Box 2 - JAMAICA PRIMARY TEXTBOOK PROGRAM

Rationale: To ensure that all students in Grades 1-6 have an adequate supply of textbooks in the core subject areas of Language Arts, Mathematics, Science and Social Studies. Implicit in this strategy is (a) a general standardization of textbooks and teaching materials to correspond with the new national curriculum, and (b) provision of textbooks free of charge to every child in primary school. Prior to the introduction of the Program, only those students who could afford it would own textbooks, many of which were not related to the curriculum. The 1990-1995 Five-Year Development Plan of the MOE states specifically that this intervention contributes directly to its principal objectives of achieving greater equity and quality in basic education.

Description: The Jamaica Primary Textbook Program (JPTP) was initiated in 1984, and gradually expanded such that by 1991, approximately 2.7 million textbooks and teachers' manuals were delivered to all children and primary teachers in the country. It should be noted that no new textbooks were created for this program. Instead, a conscious decision was taken to obtain a license agreement to reprint existing Caribbean textbooks and manuals from an established publisher.

The printing process is carried out by a local printing agency, the Gleaner Company, on its rotary printing press on an annual basis. This process has been an integral part of the entire project design, with the expectation that books produced in this manner, despite being of inferior quality to traditionally produced textbooks, would be considerably cheaper and faster to produce. Trimming, collation, cover production and binding is sub-contracted to various other commercial printers in Kingston.

Funding for the printing and delivery of the textbooks to schools is being provided by the World Bank (since 1989), the Ministry of Education, private sector companies, and CIDA (since 1987) through its education arm CODE (the Canadian Organization for Development through Education). The contribution from CIDA/CODE is by way of an annual provision of paper (290 tons of newsprint).

Evaluation: The JPTP has met its original objectives to the extent that it provided a large number of usable textbooks to a population that had never been in the position to own textbooks. This was carried out with a very short lead time, and using minimal resources in terms of authors, editors and textbook production. With respect to long-term impact, the JPTP clearly represents a major conceptual and operational achievement in Jamaican primary education. What follows is a discussion of both the achievements and hurdles faced by the program at present.

From a pedagogical perspective, all indications are that the effects have been positive. First, teacher surveys have demonstrated that the program has had positive effects on the reading habits and achievement patterns of Jamaican primary students in most subject areas. However, baseline data is not available to verify the actual effects of the program on student achievement. Second, a change in traditional teaching practices has also been observed, especially in the use of the chalkboard as a textbook substitute. This allows teachers to free up their time to provide more individual attention to students. Given that many Jamaican primary schools have a teacher:student ratio of over 1:50, this is an important issue. Third, the JPTP texts are used for homework exercises. Finally, the provision of teacher manuals has had a powerful effect on teaching practices in general. For the first time, Jamaican primary teachers have had structured suggestions provided regarding the methods of proceeding with a particular topic.

One of the fundamental assumptions of the program was that the provision of disposable books, using relatively inexpensive paper and printing, would be the most cost-effective and timely way to achieve large-scale provision of learning materials. However, the issue of textbook durability and life span has not yet been fully addressed and may be a very important factor in determining the long term cost-effectiveness of the existing program. Other issues under discussion in the Ministry include: (a) the sustainability of a program that has a high dependence on external financial support; (b) the uncertain role of the publishing industry in textbook development and production; (c) the need for curriculum revision to be reflected in textbook development; and (d) the long-term implications of free textbooks in a constrained budgetary environment.

> "Because of overcrowding and deteriorating school facilities, especially in rural areas, the physical environment in many primary and government secondary schools is not conducive to effective teaching or learning, and capital investment requirements have increased. In most of these schools, individual classes are separated only by moveable partitions and the noise level is high. There is an acute shortage of school furniture in many schools and very little maintenance has been carried out on existing buildings." (Caribbean Development Bank, 1990b).

4.60 In Jamaica, the school mapping project noted earlier, which gathered information on the condition of schools between 1981 and 1985, estimated that over 40 percent of all classrooms were in either a bad or very bad condition. This can be attributed directly to declining expenditures on maintenance, which fell over the 10-year period 1977/78 to 1986/87 by 80 percent in real terms, and from 2.8 percent to 0.8 percent as a share of the recurrent budget (Blank, 1989). The situation in Guyana is similar. Almost one-third of all primary schools (mainly wooden) were built before 1940, and were designed for much lower enrollment levels.

4.61 In summary, apart from Haiti, over 90 percent of children in Caribbean countries enroll in primary schools. In many countries, universal primary schooling has existed for several years. Schools, however, differ in what they offer, most likely contributing to often substantial variations in outcomes. The main areas of concern in primary schools are the high repetition and low attendance rates, and ensuing, often low levels of achievement attained by significant proportions of primary school graduates. Boys' performance is particularly poor. High levels of repeaters make the task of teaching more difficult as well as discourage students' academic aspirations and ultimately outcomes. Low attendance rates similarly hamper teaching and learning. Concern with the learning outcomes in primary schools has been expressed across the Region. Reading abilities in particular are generally regarded as poor. Only Jamaica and St. Kitts, however, have introduced comprehensive programs of achievement testing, outside of the common entrance examination. While no research exists on the precise nature of the relationship between resources and student achievement in the Caribbean, a positive association can be presumed. A scarcity of resources exists in all countries. Existing data do indicate that those countries with large proportions of untrained teachers and materials, particularly textbooks, in short supply, have the lowest levels of achievement as measured by test results. In addition to Haiti, this appears to be the case in several of the OECS countries and to a lesser extent in Guyana. In countries such as Jamaica, Barbados and Trinidad, nearly all teachers are trained and access to books is reasonably good. The causes of low levels of achievement must be partially found elsewhere.

An Agenda for Action

4.62 Increased effectiveness in primary schooling requires two types of inputs--resources and policymaking. Inevitably, some changes in policy will have direct and significant resource implications, e.g., government provision of a full set of textbooks for each child; others less so, e.g., changes in examination format. Several alternative types of interventions have been discussed which potentially could raise the quality of schooling. In developed countries research exists on the likely results of some of these interventions. In developing countries, the research base is weaker. The optimum intervention is one which is effective in improving learning outcomes, is cost-effective and is feasible to implement.

4.63 Five principal areas in which policy interventions to improve the quality of schooling might be most effective have recently been delineated in a World Bank policy paper on primary schooling (Lockheed and Verspoor, 1990). These are: (a) improving the curriculum, in particular the implemented as opposed to intended curriculum; (b) increasing the availability of well designed learning materials; (c) increasing official instructional time and reducing time losses; (d) improving the effectiveness of teachers; and (e) increasing the learning capacity of pupils. Within each of these areas discrete interventions will have different levels of cost effectiveness. Lockheed and Verspoor suggest what they term "promising avenues" and "blind alleys" for each. Among the latter they give examples of computer-assisted learning, lengthy pre-service teacher training, and class size reduction within the 40-50 range. The optimum approach appears to be to strive toward teachers with regular in-service training in subject and pedagogic skills, utilizing sufficient well-designed educational materials in an orderly environment where academic standards are stressed, and sufficient time allocated, and where children are healthy and adequately prepared for schooling.

4.64 Diverse diagnoses of the current state of primary schooling in the Caribbean tend to consistently emphasize the following factors as impeding desired learning outcomes:

- lack of necessary cognitive and psychomotor skills in first year pupils.
- problems associated with both overcrowded schools and small schools.
- the poor physical condition of many classrooms.
- the detrimental effects of the common entrance examination on the amount of the primary school curriculum which is learned.
- untrained teachers and inadequately trained teachers in mathematics, language and science.
- low teacher morale and high attrition rates.
- reductions in real levels of per pupil expenditure over the 1980s resulting in inadequate school finances for supplies, materials, utilities and maintenance.
- inadequate incomes among low-income families to provide the expenditures now required of them for education, i.e., teaching materials, uniforms, transport.
- lack of teaching materials including textbooks, teacher guides, globes, maps, dictionaries, blackboards, typewriters, etc.

- lack of management and supervisory capability within ministries and at the schools.
- limited community participation.

4.65 Recent Initiatives. Several promising initiatives have appeared in the Region to address these system constraints. Over the past few years Caribbean governments and educators have been encouraged to focus on enhancing primary education, first by the regional discussions preceding the World Conference on Education for All in March 1990, and second by the theme of "Improving the Quality of Basic Education" at the Conference of Commonwealth Education Ministers in October/November 1990. Wide-ranging approaches have been adopted to raise the quality of primary schooling, reflecting the different states of educational development across Caribbean countries.

4.66 Among the OECS countries, there are some commonalities of approaches being adopted--a major emphasis on provision of prevocational subjects and programs for improved teacher training, improvements in reading and mathematics achievement, and some initial attempts to produce education materials locally. What is additionally desired in many of these countries is an upgrading of physical infrastructure, although several governments underscore that this is not possible within existing domestic resources constraints.

4.67 In the larger Caribbean countries, available resources appear to be relatively higher (even now in Guyana) and substantial numbers of programs are being launched to improve primary schooling. These can be categorized under the headings of curricula assessment, teacher training and morale, learning materials, physical infrastructure, and management. In all countries, a serious concern exists with current levels of numeracy and literacy, and all report having undertaken major reviews of primary school curricula in recent years. Increasing the amount and quality of academic assessment in both primary and secondary schools for diagnostic purposes is another common feature. Jamaica and The Bahamas appear to be the most advanced in this area, but new testing and measurement units are to be established in Barbados and Belize, and a number of OECS countries are also showing interest. Jamaica's National Assessment Program is ambitious, but potentially expensive, and raises important issues regarding sampling, test design and purpose, and human resource capacity (see Box 3). Attempts to increase teacher quality and morale also are common. In-service programs tend to concentrate on training for new curricula and for remedial reading and mathematics teaching. Other programs aim at increasing the resources available to practicing teachers through resource centers and libraries, and reducing attrition rates by increasing morale. Measures being adopted include study leaves, housing support, and new promotion structures. An emphasis on the development and provision of learning materials is again increasingly common across the larger islands. Jamaica has been particularly active in the area of publishing and printing primary texts. The new primary improvement project in Guyana similarly focuses on the production of primary materials (over 1 million texts); and a new institution in Trinidad (the Educational Development and Learning Resource Centre) is geared to mass production of educational materials.

Box 3 - JAMAICA NATIONAL ASSESSMENT PROGRAM

Description: Jamaica began developing a National Assessment Program (NAP) directed at the primary level of education in 1986 with assistance from the Inter-American Development Bank. It is based on the new primary curriculum, which completed its first cycle for Grades 1-6 in 1988. To date, national administrations have only been carried out for the Grade 6 test and the Grade 1 Readiness Inventory. All other tests are still under development. The Grade 6 test was administered nationally to approximately 45,000 students in 1988, 1989, 1990 and in selected parishes in 1991. Trends in student achievement on the Grade 6 test over the 3 years of national administration show a steady gain. This is thought to be a consequence of the feedback given to the schools on their students' performance. The Grade 1 Readiness Inventory was administered in 1989, and showed that only 50% of the students assessed were performing adequately. However, this may be more of an indication of test design than student capacity.

Goals: The MOE stated goals of the NAP are as follows:

(a) to assist the teacher in planning and adapting instructional activities for the students, based on information on student educational growth and achievement
(b) to identify areas of strength and weakness in student achievement and to assist the teacher in planning activities and programs for providing enrichment or remediation as necessary
(c) to inform school professionals about areas of strength and weakness in school programs, thus enabling developmental and corrective action to be taken
(d) to assist the Ministry in formulating policy involving the allocation of resources (financial, material and human)
(e) to provide information indicating the type and extent of inservice education required or the nature of changes needed in teacher preparation
(f) to provide date for analyses to improve all facets of educational quality and performance
(g) to ensure that instructional materials and processes utilized reflect the unique nature of Jamaican culture and the environment in which children learn.

Instruments: The NAP consists of a variety of instruments, including:

(a) Grade 1 School Readiness Inventory: to determine which children entering Grade 1 posess the skills and knowledge they need to learn the curriculum and which will need assistance in developing these readiness skills. There is evidence, however, that some teachers are using this and/or other instruments to select children for Grade 1 and that some children are either sent back to basic school or to another "less desireable" primary school;
(b) Grades 1 and 2 checklists; to assist teachers determine if students have mastered the skills taught and assess whether the child is ready to move on to the next topic or should receive additional assistance;
(c) Grade 3 Diagnostic Tests (mathematics and reading performance);
(d) Grade 4 and 5 Achievement Tests (language, mathematics, science and social studies): these tests, which are teacher marked, are used primarily to assist teachers in determining individual student needs;
(e) Grade 6 Achievement Tests (mathematics, reading, science and social studies): these tests, which are centrally marked, are intended to determine what skills and concepts the students have acquired in primary school, and to use the information to make improvements in the primary system.

Box 3 - JAMAICA NATIONAL ASSESSMENT PROGRAM (continued)

Issues

Sampling: Collecting and reporting test results for every student in a given primary grade, as is presently the case in Jamaica, is very costly and time consuming. Consequently, sampling students is currently being considered. Sampling has the benefit of providing various groups (e.g., policymakers, curriculum directors, school staff, etc.) with useful information for the purpose of gauging learning achievment and for targeting resources. The impact of assessment on instruction is also retained, although perhaps not as forcefully as with individual student scores.

Assessment vs. Selection/Certification: The issue of sampling is directly related to the objectives of a given exam: if selection/certification is the goal, then each student must be tested; if assessing the system's performance in order to inform policy is the goal, then testing samples of students is more cost-effective. In Jamaica, this is particularly relevant at Grade 6, where the Ministry is seeking to improve its selection mechanism (the Common Entrance Exam) with a more curriculum based exam (e.g., the NAP), yet also seeks to assess the performance of the primary system. This may have implications for the design of the Grade 6 exam.

Human Resource Capacity: At present, only two people in the MOE are assigned to managing the entire NAP portfolio. Given the requirements of item writing, test development, administration, scoring, security, and timely reporting, this is clearly insufficient. However, the MOE is operating in a very scarce resource environment, and must carefully consider which responsibilities must necessarily remain in the Ministry and which might be contracted out.

4.68 High priority has been assigned to the repair as well as construction of new primary schools not only in the OECS countries but also in Jamaica, Trinidad, Guyana and Barbados where primary school building programs are being financed by foreign loans or grants. Twenty-seven new primary schools are to be constructed both in Guyana and in Trinidad. In Barbados, small schools are being replaced by larger, better-equipped ones. Programs to increase the effectiveness of education management again show similar trends. Both Jamaica and Guyana have programs to strengthen planning at the ministry level and there is a common aim to decentralize decision making and concomitantly strengthen regional offices. At the school level,strong emphasis exists on mobilizing parent-teacher associations, and increased participation by individuals, businesses and other organizations to provide additional human and financial resources.

4.69 This myriad of current and projected interventions by governments underscores the substantial political commitment throughout the Region to improving primary education, even amid difficult economic and financial circumstances. In several countries, much remains to be done. One such area for accelerated action is achievement testing. Another is the production of educational materials. Yet another is the design and implementation of systematic programs aimed at higher levels of literacy and numeracy achievement. Finally, urgent attention must be given to redressing the differential level of achievement among boys and girls, and between children in different locations. And among the most "promising avenues" already identified as a priority in the government position papers summarized above, is increased access to relevant textbooks and teacher guides, as elaborated below.

4.70 Textbook Production. If the Caribbean governments are to restore and sustain availability of textbooks, measures will have to be introduced to reduce printing and production costs and ensure wide distribution, while simultaneously maintaining and/or improving existing quality and effectiveness. A key issue will be realistically assessing the finances required to guarantee sustainable flows of textbooks. This may necessitate introduction of elements of cost-recovery from parents. In identifying appropriate measures, Caribbean governments will need to make an objective assessment of national and regional capacity for all stages of the book development process. A recent study of World Bank-funded non-commercial book projects highlights that where projects have faltered, the main sources of difficulty have been underestimation of the technical complexity of the process (Searle, 1989).

4.71 A short-term measure to increase access to materials is to make more use of existing national and regional printing capacity to provide, under license, books already in print. This minimizes new editorial and marketing costs, and reduces shipping charges. Particularly for the small countries, however, which often have higher labor costs, less sophisticated printing facilities, and less scope for economies of scale, it may prove more cost-effective to continue to print overseas. This can be ascertained through competitive tendering.

4.72 Another short-term but related measure is for governments to reduce the proliferation of books used for each subject in schools. Increased standardization, initially for mathematics and language arts, will facilitate larger print-runs and reduce costs. There may be scope for standardizing core material on a Regional basis, coupled with local printing of supplementary texts to meet national needs if that proves cost-effective. This would require strengthening of Caribbean curriculum and textbook development units. To achieve greater standardization, there is a strong case for establishing a regional curriculum committee, perhaps along the lines of the CXC subject panels, to advise governments on curriculum requirements and guide regional standardization of textbooks. This committee could act as a vehicle for identification and dissemination of other instructional materials (workbooks, diagnostic tests, etc.) which could be locally printed. A longer term objective is to strengthen national capacity for textbook development. An important measure will be to provide training for Caribbean nationals in authorship, editorial work and textbook art and design. For small-scale production needs, training should cover the full range of desk-top publishing skills.

4.73 The existing primary school textbooks do not always adequately respond to the full range of age, ability and aptitude in primary schools. The material often reflects anticipated student progression towards the Common Entrance Examination as well as entry into a prestigious secondary school. Governments may want to consider developing alternative textbooks and other instructional materials for "slow learners" and pupils with special learning difficulties, while importantly not lowering overall educational standards. This could be included in the mandate of the proposed Regional curriculum committee or national sub-committees.

4.74 Another important quality component is the durability of the textbooks. A book costing US$1.00 which lasts only one year is less cost-effective than one costing US$5.00 which can last 10 years. In instances where governments adopt national production, every effort should be made to ensure that good binding and book covers are provided. To lengthen book life, governments could introduce policies of book inspection, coverage and repair at the school level. Another option would be to institute centralized repair procedures either within the government (e.g., government printing office) or through private firms.

4.75 Government participation in the book procurement and supply process varies across the Caribbean. At one end of the spectrum (e.g., Jamaica, Belize) this process has become highly centralized. At the other end (e.g., many OECS countries), the process has devolved to private suppliers. In the current economic climate, it is not likely that governments will be able to afford a substantial increase on book outlays. If prices continue to rise, they probably will be able to provide fewer books with fixed levels of expenditure. Whether the system is centralized or decentralized, a common objective should be to guarantee availability without significant additional central government expenditure.

4.76 At the broader policy level, governments should explore viable measures to either reduce or stabilize the costs of books. Some of these, such as new printing and production arrangements, have been outlined. Another policy measure would be to secure a waiver on import charges for books and book production materials, such as ink and paper, thus, promoting more local production, where determined to be the least cost approach. In instances where the central government remains the major supplier, cost-recovery measures could be introduced. One option would be for parents to be charged rental fees to create a centrally managed revolving fund for future purchases. The Jamaica Secondary School Rental Scheme is an example of this approach. A complementary measure is the introduction of "caution" and "damage" fees such as are paid in Barbados. Payments in kind could be achieved by enlisting parents and children to cover and repair books. Where governments prefer to play a more limited role, measures need to be taken to ensure that booksellers stock adequate supplies. At least across OECS countries, a recent study indicates that this is not always the case (Clare and Shepherd, 1991).

C. Policy and Investment Options

4.77 The following are policy and investment options for preschool and primary education.

Preschool

1. Explore the potential to expand enrollments in preschool programs by mobilizing support, primarily from non-governmental organizations and the private sector, including enterprises and employees who would benefit. Concomitantly, increased attention should be given by governments to help support expanded enrollments among disadvantaged groups, such as via carefully targeted subsidization of fees and school meals.

2. Consider defining minimum physical standards as a condition for any public or NGO support and encourage local communities to take

responsibility for physical maintenance (SERVOL network, Trinidad), to ensure minimum acceptable standards of preschools.

3. Consider operating double-shift systems, where feasible, to facilitate expanded enrollments.

4. Encourage and support development of national preschool organizations, such as the Association of Basic School Boards in Jamaica, to provide technical support and advocacy for expansion of access and improvement of quality of early childhood development programs.

5. Give serious consideration to establishing a Regional Training and Resource Center (RTRC) supported by governmental and non-governmental organizations and donor agencies. The RTRC would offer training to early childhood workers and supervisors; provide external certification opportunities to preschool workers from the Region; help countries establish appropriate preschool systems and integrate early childhood development programs, assess training needs and develop training resources.

6. Encourage a shift towards in-service, preschool teacher training utilizing, where relevant and available, the curricula, teacher training materials, and methods developed in Jamaica by SERVOL and at UWI.

Primary

1. Governments should consider better defining the desired outcomes of primary schooling so as to increase the focus of interventions and the targeting of scarce resources to priority activities.

2. Given the projected reductions in children of school age, particularly in low population areas, governments may wish to consider either amalgamations or the greater use of multigrade teaching approaches. Mechanisms may need to be identified to ensure that there is at least a common minimum base of resources and educational materials.

3. Consideration should be given to increasing the amount and quality of pupil assessment in core subjects to systematically keep pupils, teachers, and governments informed of achievement levels and trends and to provide guidance for required remedial instruction. Regional experiences such as the National Assessment Programme in Jamaica, the reading test kits in Barbados and St. Kitts appear to provide useful models on which to build.

4. Consider supporting the development of a Regional curriculum committee to advise on national curriculum requirements and guide regional standardization of a reduced number of textbooks, and other learning materials (including for slow learners) and developing regional publishing

and printing policies. Where printed materials are provided for pupils, governments may wish to introduce programs of book inspection, coverage and repair at the schools and require damage bonds, as in Barbados.

5. Where such efforts have not already occurred, Caribbean countries may consider undertaking, nationally or subregionally, studies of teacher salaries and conditions, and comparing the results to the situation facing similar occupational groups. In particular, consideration may be given to salary structures and possibilities of promotion. In countries where turnover is high, consideration may be given to identifying forms of inducement for qualified teachers to remain in the profession.

6. Governments may consider establishment and maintenance of standards of instructional time, particularly in the core subjects and consider the implications of lengthening the teaching day.

7. Consideration should be given to developing programs of instruction for head teachers to increase their effectiveness in team leadership and guiding utilization of teaching resources, and improving the capacity for in-service training within the school.

8. Many governments may want to explore approaches to increase community involvement in the maintenance of schools, and increase the powers of management boards over decisionmaking and resources. Recent innovations, such as the SCOPE program in Jamaica, may be a useful starting point for further analysis.

CHAPTER V

SECONDARY EDUCATION

5.1 Secondary education furthers the development of general intellectual competencies learned at primary school that are relevant to many occupations as well as provides the foundation for further education and training. Poor quality primary schooling will reduce the effectiveness of secondary education. Similarly, a strong secondary education is a prerequisite for effective tertiary, higher education, and skills training.

5.2 The structure of secondary schooling is more complex than primary schooling. The standard pattern in English-speaking Caribbean countries is six years of primary schooling followed by five years of secondary (exceptions being Trinidad with cycles of seven and five years, and Belize with eight and four years). The majority of governments, however, cannot yet provide all students with the full secondary cycle. The destination of students after the primary phase is determined by performance in the secondary school common entrance examination. Usually the highest achievers proceed to older, prestigious secondary schools (many with six forms or grades), the second tier to other five-year secondary schools, and those with the lowest examination marks to all-age primary or junior secondary schools for a two- to four-year period. Limited opportunities exist for transferring from all-age schools to full secondary schools either during or at the end of the cycle. In some countries (e.g., Trinidad, St. Kitts-Nevis, and Montserrat) the five-year secondary cycle encompasses a three-year junior and two-year senior secondary cycle. In the Dominican Republic, secondary schooling ranges from three to five years of study depending on the type, all of which commence after eight years of primary school. Most Caribbean countries offer three secondary education streams: academic, vocational-technical, and primary school teacher training. Secondary schooling in Haiti lasts only three years but follows 10 years of primary schooling divided into three successive cycles of four, three, and three years, respectively.

A. Coverage and Access

Enrollment Growth

5.3 Enrollment data are often misleading with inconsistent definitions of secondary students applied across the Region. In some countries, secondary enrollment data include all who remain in schooling after the common entrance examination, including those in all-age primary schools, while in other cases the data reflect only those in secondary schools. Table 5.1 provides secondary enrollment data over the period 1980 to 1988 as delineated by individual Caribbean governments. In general, the OECS countries and Belize apply the restricted definition while the others utilize the broader definition. Since the early 1980s growth in enrollments in the English-speaking countries has been very small and even negative in four countries. For those countries where all secondary students are included in enrollment figures (e.g., Jamaica, Trinidad and Barbados), low and negative growth rates reflect reductions in the age cohort. As this age cohort also has decreased in the OECS countries, the general stability of secondary school enrollments implies that over time a slightly larger percentage of primary school graduates are proceeding to secondary education. As was the case for primary schooling, the most rapid increase in secondary enrollments has been in Haiti, again as a result of expansion of places by the non-government sector. Expansion has also occurred in St. Lucia and Belize.

Table 5.1: CARIBBEAN - SECONDARY SCHOOL ENROLLMENTS, 1980 to 1988

Country	1980	1984	1985	1986	1987	1988	Percent Change 1980-88
Antigua	---	---	4,480	4,346	4,413	---	-0.5
The Bahamas	23,761	23,053	23,563	23,280	23,293	23,929	0.1
Barbados	26,424	26,295	26,779	26,459	26,831	26,759	0.2
Belize	5,435	6,532	6,676	6,853	7,326	7,376	4.5
Dominica	---	3,443	3,345	3,346	3,264	3,282	-1.2
Grenada	5,253	6,508	6,341	6,437	5,457	6,395	2.7
Guyana	---	68,560	---	---	73,418	---	2.4
Jamaica	---	---	240,409	252,330	249,547	237,042	-0.5
St. Kitts	4,496	4,032	4,047	4,153	4,115	4,298	-0.6
St. Lucia	3,875	5,030	5,665	5,934	6,284	6,789	9.4
St. Vincent	5,329	5,501	5,975	6,535	6,358	6,356	2.4
Trinidad	86,833	89,452	91,000	91,628	92,299	92,321	0.8
Dominican Rep.	331,471	---	---	---	---	---	---
Haiti	87,680	134,300	154,300	176,900	203,000	---	18.8
Suriname	32,156	32,274	37,630	35,678	34,951	33,289	1.0

Notes: Enrollments for the OECS countries and Belize cover the standard secondary school only. For all other countries, all post-primary schooling is included.

Source: CDB (1990); Commonwealth Secretariat (1990b); Ministry of Education of Suriname; World Bank staff appraisal reports.

5.4 Data on the coverage of secondary education in the Caribbean also must be interpreted with caution due to distinct definitions between countries of what constitutes secondary education as well as the varying duration of different school types. A blanket indicator, such as the proportion of all 12-to 16-year-olds in school, can be misleading for cross- and within country-comparisons. Such data can be useful, however, as a measure of changes in coverage within countries over time. Table 5.2 presents such enrollment ratios since 1970 for some of the larger Caribbean countries. Coverage has clearly increased in the Dominican Republic and Haiti, although in the latter it is still very low. While there has been little increase in coverage in Guyana and Jamaica since 1980, Barbados has achieved nearly universal secondary enrollment.

Table 5.2: CARIBBEAN - SECONDARY ENROLLMENT RATIOS IN SELECTED CARIBBEAN COUNTRIES, 1970, 1980 AND LATEST (percent)

Country	1970	1980	Latest
Barbados	71	85	93
Guyana	56	59	56
Jamaica	46	58	59
Dominican Republic	20	42	50
Haiti	6	12	18

Source: UNECLA (1988).

5.5 More precise information on coverage is available for those countries that document enrollments by each age-specific group (Table 5.3). For the OECS countries, the average proportion of 12-to-15 year olds in school is 80 percent. In Barbados, 95 percent of 12-to 16-year olds are in school, and in Trinidad, The Bahamas and Jamaica nearly 75 percent are enrolled.

Table 5.3: CARIBBEAN - PROPORTIONS OF VARIOUS AGE GROUPS IN SECONDARY SCHOOL, SELECTED CARIBBEAN COUNTRIES, MOST RECENT ESTIMATES

Country	12-15 Years	Country	12-16 Years
Antigua	97	The Bahamas	75
Dominica	68	Barbados	95
Grenada	78	Guyana	60
St. Kitts	95	Jamaica	75
St. Lucia	78	Trinidad	76
St. Vincent	79	Suriname	61

Source: World Bank (1990d); Commonwealth Secretariat (1990b); Trinidad Ministry of Education (no date); Jamaica Ministry of Education (no date); St. Kitts and Nevis Ministry of Education, Suriname Ministry of Education; World Bank staff appraisal reports.

5.6 Not all secondary students in the Caribbean, however, are enrolled in a 'standard' five-year program. Many are following three year programs. The enrollment ratios by age for Trinidad illustrate this point:

Age (in years)	10	12	13	14	15	16
Enrollment ratio	99.7	93.4	90.7	91.6	66.9	40.1

Overall, comparing all measures of coverage in the Caribbean with the middle-income country average of 54 percent for gross secondary school enrollment ratios (World Bank, 1990a), the Region is performing well. In specific, in the English-speaking countries, enrollments are well above average, and the Dominican Republic is near the average. Only Haiti's coverage remains well below.

Differential Access

5.7 As with primary schooling, access to secondary schooling does not always translate into equal access to similar quality schooling. Sharp differences in quality exist between secondary schools serving those who pass the common entrance examinations which education culminates in the Caribbean Examination Council (CXC) examinations and the junior secondary schools or all-age primary schools enrolling students who fail the common entrance examination. Before presenting data on resource differences between such schools, some illustrations of the common entrance pass rates and the composition of secondary school enrollments are useful.

5.8 The proportion of primary school graduates who pass the common entrance examinations and enter the five-year secondary schools is relatively low in most countries, e.g., Guyana 33 percent, Jamaica 24 percent, St. Vincent 33 percent, St. Lucia 27 percent, and Grenada 48 percent. In fact, across the Caribbean, the majority of secondary school children are not enrolled in the traditional secondary schools that culminate in the CXC examinations. Many students attend schools that some countries do not even classify as secondary schools. This implies important qualitative differences between schools and hence in educational opportunities. In many respects the large overall secondary enrollment ratios mask what in many countries are largely elitist educational systems.

5.9 For example, in Jamaica, primary school graduates enroll in a variety of schools. The distribution of enrollments for the 1989/90 academic year was:

All-age (grades 7-9)	59,761	Secondary high	68,565
New secondary	74,008	Comprehensive high	8,461
		Technical high	14,001

While the high schools lead to regional and international qualifications, the all-age and new secondary schools do not (except for a small minority of pupils). Striking differentials exist in outlays on secondary education by school type, as evidenced in recent calculations by the Jamaica Ministry of Education (1990). Taking the all-age schools as the base, annual per pupil public expenditures in Jamaica's new secondary schools are 2.1 times greater, in comprehensive high schools 2.2 times greater, in secondary high schools 3.0 times greater, and in technical high schools 4.1 times greater. These differences partially stem from variations in pupil/teacher ratios, which average 38 in the all-age schools but decline to around 20 in all other types. Non-personnel expenditures also vary substantially between schools.

5.10 Expenditures also vary between schools of the same type. In the Jamaican case, the most expensive all-age (primary) school sampled had a higher cost per student than the least expensive secondary school. Similarly, in St. Vincent, costs per student in 1984 and 1987 were 60 and 90 percent, respectively greater in urban than rural secondary schools (Caribbean Development Bank, 1990b).

5.11 Data on access to high-cost secondary schooling by socioeconomic status are not widely available. Existing information reveals relatively limited access for low-income groups. Miller (1990) found that only 15 percent of high school children in Jamaica had parents who were unemployed, unskilled or semi-skilled, despite the fact that 50 percent of the adult population could be so classified. Welch (1988) found similar results for Barbados. In terms of gender, girls perform better than boys on the common entrance examinations. Thus, where no explicit policy exists to maintain a balanced gender ratio in secondary schools, girls have greater access to more highly resourced schools. Indeed, secondary high school places in the Caribbean tend to be distributed 60:40, favoring girls.

B. Quality and Effectiveness

5.12 Across the English-speaking Caribbean, access to some form of post-primary schooling is apparently available to only 75 percent of primary school graduates. Nevertheless, this is a much higher level of availability than in many other middle-income countries. Two key issues emerge at this education level. The first relates to the differences among the several types of post-primary schooling, including variations in levels of resource allocations and access by different socioeconomic groups. The second is the effectiveness of each school type in educating students, as measured in examination results.

5.13 Secondary schooling throughout the English-speaking Caribbean focuses strongly on the CXC examinations and, to a lesser extent, the O-level examinations. The O-level examinations are conducted by various British examining boards. Post-primary students not being prepared for these examinations either take some type of national secondary school graduating examination or graduate with no certification. Since the CXC examinations have been administered across the Region for several years, both cross-country comparisons of results and trends within countries provide a valuable input for assessing the quality of the best secondary schooling. While these examinations are taken by only between one-quarter and two-thirds of the secondary school cohort, they hold a preeminent place in the minds of all entrants as well as their parents and teachers. Prior to discussing CXC results, however, the effectiveness of schooling for the majority of students is reviewed.

Performance in Non-selective Schools

5.14 In Jamaica, the Jamaica School Certificate (JSC) is administered to students in all-age and new secondary schools. Five subjects are examined. Between 1984 and 1987 the percentage of entrants passing one or more of these subjects ranged from 28 to 43 percent (Jamaica Ministry of Education, 1990b). In recent years, the secondary school certificate examination has become more popular among students. Just 10 percent of entrants have been awarded grades which are recognized for post-secondary education programs. Over the period 1982-88, the pass rate for the secondary school graduating examination in St. Vicent ranged from 6 percent to 18 percent.

5.15 The results of the secondary school proficiency examination in Guyana are not much more encouraging. Administered to students in the community high schools, this examination is in the form of multiple choice (except for language). Examination results in 1986 were:

	Maximum Score	Mean	Chance Score
Mathematics	40	12.7	10
Reasoning	40	15.4	10
Science	40	14.9	10
Social Science	40	16.3	10
Language	70	28.2	n.a.

Notably, the annual report on the examinations states "the mathematics test proved to be the most difficult with the mean score being only 2.7 score points above the chance score. It is significant that on all academic tests, except science, candidates scored zero.... which suggests that candidates could not follow the written instructions...."

In aggregate, these few examples of the quantitative performance by students not taking the CXC examinations, coupled with the many negative qualitative accounts to be found across the Region, suggest that secondary schooling is not meeting its objectives for a large proportion of students.

Performance in Selective Schools

5.16 Considerable quantitative data exists on the effectiveness of secondary high schools deriving from the results of both CXC and the British-based GCE O-level examinations. In the discussion below, pass rates for the CXC examinations are defined according to the conventional approach in the Region, i.e., attainment of Grade I or Grade II at General Proficiency. This does not imply that passes at lower grades have no value. However, Grades I and II were originally regarded as equivalent to a pass on the GCE O-level exams and, thus, were set as the formal entrance requirement for most post-secondary courses as well as salaried government employment. Over time a view has developed that these standards are somewhat higher than the GCE O-level pass standard. In 1989, 70,000 candidates from 16 countries in the Caribbean took the CXC examinations. Two-thirds took the General Proficiency, 7 percent the Basic Proficiency, and the rest a combination. Of these candidates, 60 percent were female and 40 percent male.

5.17 Table 5.4 presents pass rates for 10 subjects from 1984 to 1989. Several trends are evident. Contrasting 1989 results with those of 1984, pass rates declined in English, mathematics, and Caribbean history; increased in physics, biology, French, social studies, principles of accounts and technical drawing; and remained constant in principles of business. Contrasting 1989 to 1987, in only 3 of the 10 subjects did pass rates increase. Currently the lowest passes are in mathematics (26 percent), English (31 percent), and biology (32 percent).

Table 5.4: CARIBBEAN - TRENDS IN COMMON ENTRANCE EXAMINATIONS
(proportion achieving grades I and II, selected subjects 1984-1989, percent)

Subject	1984	1985	1986	1987	1988	1989
English	43	34	40	40	33	31
Mathematics	30	30	26	28	29	26
Physics	--	22	26	33	38	40
Biology	--	13	31	45	31	32
French	60	54	53	62	57	62
Caribbean History	53	54	55	52	46	40
Social Studies	26	43	41	38	34	38
Principles of Business	44	59	42	40	48	43
Principles of Accounts	39	39	56	43	43	51
Technical Drawing	25	52	61	67	60	54

Note: Physics and Biology were only offered for the first time in 1985 and did not receive the full regional entry until 1987.

Source: CXC computer printouts.

5.18 Examining results across countries, Table 5.5 presents the pass rates for all subjects, and English and mathematics for 1984 and 1989. Pass rates in all subjects increased only in St. Vincent, St. Lucia, and Trinidad. Some of the decreases were severe, particularly in Antigua, Belize, Grenada, and Dominica. They also fell in St. Kitts, although it maintains the highest overall pass rate (55 percent) for all subjects. The overall pass rate in Guyana is extremely low, both in English and mathematics. In English, the pass rates fell between 1984 and 1989 in every country and in many cases very severely (e.g., Belize and Barbados). Current results are very poor in Guyana, Grenada, Jamaica, and Dominica. In mathematics, only Grenada and Trinidad were able to increase the pass rates (in each case by just 1 percent). In all other countries they fell. In Guyana, Jamaica, Dominica, and Trinidad the mathematics pass rates were below 30 percent; only in Barbados and Belize were they at least 40 percent.

Table 5.5: CARIBBEAN - ENTRANTS ACHIEVING GRADES I AND II IN ALL SUBJECTS, ENGLISH AND MATHEMATICS, 1984 and 1989 (percent)

Country	All Subjects		English		Math	
	1984	1989	1984	1989	1984	1989
Antigua	46	37 (-)	61	51 (-)	40	36 (-)
Barbados	57	52 (-)	62	41 (-)	52	42 (-)
Belize	65	48 (-)	64	30 (-)	54	40 (-)
Dominica	54	46 (-)	64	29 (-)	49	27 (-)
Grenada	43	35 (-)	46	22 (-)	30	31 (+)
Guyana	23	18 (-)	24	12 (-)	20	13 (-)
Jamaica	39	36 (-)	43	27 (-)	30	22 (-)
St. Kitts	62	55 (-)	61	42 (-)	45	35 (-)
St. Lucia	47	53 (+)	46	45 (-)	39	32 (-)
St. Vincent	46	49 (+)	40	38 (-)	43	32 (-)
Trinidad	36	43 (+)	42	38 (-)	28	29 (+)

Note: CXC offered 22 subjects in 1984 and 33 in 1989;
sign in parentheses indicates whether pass rates rose or fell.
Source: CXC computer printouts.

5.19 A note of caution is required in drawing conclusions from these data. Over the 1984-89 period the number of entrants to the general proficiency examination increased substantially, i.e., from 151,644 entries in 1984 to 226,880 entries in 1989. This increase was partly due to an expansion of access to secondary schooling and partly due to increased preference for the general as opposed to basic examinations. This may have resulted in pupils with lower abilities taking the examinations, thus lowering the overall pass rate. There is some evidence, however, that some countries in which a higher proportion of the cohort took the examination (e.g., St. Kitts) had pass rates among the very highest in the Region. Similarly, it is difficult to accept that the proportion of Caribbean children who succeed in the examinations cannot be increased even amid expansion in access. However, a definitive interpretation of the meaning of pass rates will require more research. That does not, however, negate that current pass rates in several countries are low given the small percentages of cohorts tested.

5.20 The pass rates given in Tables 5.4 and 5.5 are for single subjects. The achievement level formally set for A-level study which leads to the university and typically is required for consideration for public and private sector employment is normally to obtain passing grades, i.e., Grades I or II, in at least four or five subjects. Table 5.6 indicates the percentage of all candidates between 1987 and 1991 who passed at least four subjects in one examination. As noted, on average less than one candidate in eight was successful. For individual countries in 1990, the proportion passing ranged from 1 in 8 to 1 in 34. The outcome of testing in one of the OECS countries illustrates the small proportion who qualify to progress to the next level of education: only one in three (33 percent) primary students pass the common entrance examination, and of those who proceed to secondary education, almost half subsequently fail to pass any subject in one sitting of the CXC and another 30 percent pass just one or two CXC subjects.

Table 5.6: CARIBBEAN - PERCENTAGE OF CANDIDATES ACHIEVING CXC PASS GRADES IN FOUR OR MORE SUBJECTS, 1987-91

# Subjects/Year	1987	1988	1989	1990	1991	Overall Mean
4	5.00	4.60	4.60	4.90	4.50	4.70
5	3.00	3.60	3.30	3.30	3.30	3.30
6	1.60	2.30	2.80	2.60	2.40	2.30
7-10	1.12	2.10	2.84	2.54	2.67	2.40
TOTAL	10.72	12.60	13.54	13.34	12.87	12.70
TOTAL CAND. ENTRY	64.810	70.818	69,865	73,540	80,014	---

Source: Caribbean Examinations Council.

5.21 Students able to take CXC examinations represent a minority of all secondary students. Apart from St. Kitts, Barbados and Trinidad, on average between 25 percent and 35 percent of primary school graduates enter secondary schools, and thus are eligible to take the CXC examinations. Cox (1989) attempted to calculate the percentages of 15 to 19-year-olds who entered and passed the CXC or GCE O-level English examinations in 1965 and 1984 in seven Caribbean countries. The results (Table 5.7) demonstrate the small percentages of students involved. Since 1984, the number of candidates taking the English examination has been stationary in most of these countries, while the pass rate fell from 42.7 percent to 31.2 percent in 1989. It is very clear that a highly selective group takes these examinations and an even more selective subgroup actually passes it.

Table 5.7: CARIBBEAN - PROPORTION TAKING AND PASSING GCE AND CXC ENGLISH LANGUAGE EXAMINATIONS, 1965 AND 1984
(in percentage of 15-19 year cohorts)

Country	Taking Exam		Passing Exam	
	1965	1984	1965	1984
Barbados	14.9	28.7	4.6	15.1
Belize	2.6	4.2	0.6	1.9
Grenada	5.6	12.9	1.1	2.8
Guyana	16.5	4.9	1.8	1.0
Jamaica	3.8	9.3	1.0	2.7
St. Lucia	2.3	5.2	0.7	2.1
Trinidad	8.5	11.2	2.0	3.4

Source: Cox (1990).

5.22 In summary, undoubtedly the level of achievement of some Caribbean secondary school students is equivalent to anywhere in the world. Nevertheless, the average student in selective schools in the Region does not appear to obtain an acceptable quality of education, assuming the CXC results are one reasonable measure of performance of the education system. While the data in Table 5.6 indicating the proportion of students who passed the CXC in any given sitting may somewhat underestimate the ultimate total proportion of passes, i.e., those successful in subsequent attempts, the difference is not likely to be great. Quantitative data on educational outcomes in the non-selective schools are admittedly scarce. However, existing information coupled with the outcomes in selective schools should be of concern to regional governments.

Determinants of Achievement

5.23 Efforts to increase the level of achievement in secondary schooling require knowledge of factors that promote or interfere with learning. Across the Caribbean few studies exist in this regard. Significantly, no negative correlation exists between the proportion of the cohort entered and pass rates. If anything, the relationship is positive.

5.24 What is known is that levels of achievement differ significantly between distinct student groups, although the causes are not fully known. One factor which appears to influence test scores is gender. As earlier noted (Chapter 4), common entrance pass rates consistently are higher for girls than for boys. In subjects such as English, history, and social studies, the higher achievement rates for girls persist through secondary school to the CXC examinations. In other subjects, such as mathematics, geography, principles of accounts, and business, boys score higher.

5.25 Pass rates by gender in 1985 for the most commonly chosen CXC subjects are presented in Table 5.8. Science examinations were introduced only recently by the CXC. Studies by Kutnick and Jules (1988) in Trinidad of test results in forms 2, 5 and 6 indicated that girls perform better than boys in all sciences. However, Osuji's (1987) study of educational achievement of secondary students, form 5, suggests that gender is not a significant variable in explaining the number of CXC passes. Generally, limited existing information suggests that while girls may perform on average slightly better than boys at secondary school, the difference is much less than in primary school. While the effect of gender is not conclusive as an explanatory variable in educational attainment among secondary school pupils, there is evidence that achievement is higher in single-sex schools than in coeducational ones.

Table 5.8: CARIBBEAN - PROPORTION OF CANDIDATES GAINING GRADES 1 AND 2 on CXC, BY MAJOR SUBJECT AND GENDER, 1985

Subject/Gender	Male	Female	Subject/Gender	Male	Female
History	52	53	Princ of Business	65	55
English Lang	31	36	Princ of Accounts	45	36
English Lit	36	43	Social Studies	41	44
Geography	50	45	Spanish	49	48
Maths	37	25			

Source: Leo-Rhynie (1989).

5.26 Socioeconomic status also apparently has a significant effect on CXC performance. According to Osuji (1987), this variable, as measured by occupational status of the household head, was the only one of a set (including gender and race) that significantly correlated to the number of CXC passes achieved by secondary school students. The study by Kutnick and Jules (1989) of science achievement in Trinidad also found that within the same school class, children from middle-class backgrounds performed at higher levels than those from working class families.

5.27 Another variable also consistently related to educational achievement--and importantly more susceptible to policy intervention--is the type of school, including its form of management. CXC results vary significantly among school types in Trinidad. For example, the percentage of examination entrants in 1988 who achieved the highest three grades for mathematics and English by school type were:

	Assisted Secondary	Government Secondary	Private Secondary	Senior Comprehensive
English	95	85	73	58
Mathematics	84	63	52	44

These variations are unlikely to be attributable solely to initial differences in common entrance scores. Rather they are likely to be indicative of differences in the quality of education offered in each type of school. Similarly, in Grenada while the overall CXC pass rate (Grades I and II) in 1989 averaged 42.2 percent, this ranged between schools from 15 to 69 percent. These studies, particularly Osuji's, demonstrate higher achievement levels in the assisted secondary schools compared to government secondary schools. Similarly, in the Dominican Republic, Jimenez *et al.* (1989) found higher achievement in private schools after controlling for socioeconomic background characteristics and selection biases. Further research into the underlying causes of differentials in educational achievement between types of schools is especially important to help guide efficient and cost-effective interventions to enhance school achievement, particularly in the face of serious budgetary restrictions throughout the Caribbean.

Vocational Education: Motivations and Experiences

5.28 Discussions of the quality and effectiveness of secondary schooling in the Caribbean, as elsewhere, invariably turn to the question of vocational education and training (VET). Among the issues at the forefront of debate are: (a) where such education should be provided (e.g., in secondary school, post-secondary educational institutions, skill training centers, firms, through apprenticeships); (b) who should provide it (i.e., government, firms, entrepreneurial trainers); and (c) how should it be financed (i.e., contribution of government, firms, individuals). Much debate centers around the fundamental question of whether it is appropriate to pursue full-time pre-employment VET in a formal educational setting, as opposed to alternative approaches such as in-service and more non-formal skills training programs.

5.29 The need for provision of VET has been stressed in virtually every major document relating to educational development in the English-speaking Caribbean in this century. The most recent effort in this area is the comprehensive Survey of Technical and Vocational Education and Training undertaken by CARICOM in 1988. The desire of Caribbean governments to provide VET is fueled by a number of factors, as outlined below. Though wide ranging, these arguments in aggregate provide a powerful impetus for providing VET within the formal education system of the Caribbean Region.

(i) High rates of youth unemployment. Governments and donors have often encouraged operation of vocational schools or conduct of vocational courses in secondary schools on the grounds that these will improve the employment chances of secondary school graduates. High youth unemployment rates across the Caribbean often are attributed to lack of skills.

(ii) The desire to alter attitudes and aspirations. A widely held view is that general academic schooling strengthens the aspirations of youth for white-collar jobs and reduces their desire or willingness to enter manual occupations. The assumption is that introducing students to vocational subjects will change these attitudes and subsequently reduce unemployment.

(iii) High rates of academic failure. Pass rates in the academic subjects of the CXC and GCE examinations are low across the Caribbean. Only some 13 percent of those who take these examinations obtain passing grades in four or more subjects. Vocational education may be regarded under these circumstances as a needed response to the less academically prepared group of secondary students. Since many of these students are also economically disadvantaged, it is often proposed that the provision of vocational courses and programs enhances equity.

(iv) The need for a pool of skilled labor. Emigration of large numbers of skilled workers to North America and Britain (especially in the 1960s), coupled with the desire to increase value-added industrial output, have been additional motives for providing pre-employment vocational education and training across the Caribbean. More recently the view has developed that a skilled labor force is first required before industry can develop, and especially before foreign firms will set up operations in a particular country.

(v) The desire to reduce technological dependency. The introduction of vocational and technical subjects into the formal educational system is seen as one approach to reduce the technological dependence of Caribbean countries, and thus increase the overall well-being and levels of self- esteem of the people.

5.30 Vocational education and training in the Caribbean generally has been offered via three mechanisms. The predominant mode is provision within the formal education system. In Jamaica, Trinidad, and Guyana diversified curricula with VET are strongly embedded within the secondary school system, typically within those schools developed in the major secondary school expansion period of the 1970s and supported by international donors. This is also the path the OECS appears to be following, again with the aid of donor-assisted technical and vocational training projects. In Trinidad--the country perhaps farthest down this path--craft examinations taken in schools are identical to those taken by apprentices in the labor force. Government statements from across the Region suggest the need to significantly strengthen VET, particularly in schools not preparing students to take the CXC examination. Pre-employment training in all Caribbean countries dominates the tertiary sector.

5.31 Most countries provide two additional forms of VET. One is via non-formal skill-training programs, such as the Human Employment and Resource Training Trust (HEART) in Jamaica, (Service Volunteered for All) SERVOL and the Youth Training and Employment Partnership Program, Ltd. in Trinidad, the OAS/USAID Skills Training Program in OECS countries, and the Industrial Training Center in Guyana. Some of these programs are operated by NGOs or ministries other than ministries of education while others are conducted by national training boards. The other type of VET is training provided by public and private employers and training institutions. There is little information available on the latter type. The apprenticeship system operates in Barbados, Trinidad, Jamaica, and Guyana. However, only a small number of firms offer apprenticeships.

5.32 The Caribbean experience of diversifying secondary school curricula through the addition of vocational subjects must be examined from two perspectives: (i) the cost of providing secondary schooling; and (ii) the consequent changes in school graduates' behavior, given the motivations for VET as outlined above. Prevocational and vocational subjects cover a wide range of areas and hence should not be treated as a single, homogenous set. The costs and outcomes are likely to vary widely between courses such as office procedure and general engineering. The ensuing discussion focuses more on the latter type of course. The costs of such courses are likely to be higher for a variety of reasons, including the capital costs of workshops, equipment, materials, and smaller classes.

5.33 In fact, few studies have been undertaken to date of the costs of vocational education in Caribbean countries. That of Layne (1985) indicated the unit cost in Barbados of a new secondary school was B$821 in 1989 as opposed to B$198 in that year in the old grammar schools. The CDB/IDA vocational and technical education project in the OECS countries estimates an average capital and equipment cost per training place at US$2,405. For Dominica, where that project places more emphasis on the schools as opposed to the technical college, the estimate is US$1,114 per place. Perhaps the most detailed cost estimates have been made by Chin-Aleung (1988) for Trinidad. Total recurrent cost at a senior comprehensive school was calculated to be T$3,870 compared to T$2,562 at a 'traditional school' with no vocational education component, or an increase of 51 percent. Most of the difference is attributable to non-teacher costs. When costs are calculated per successful student, these are T$83,000 for a specialized craft graduate (with very low pass rates) compared to T$14,000 for a student with a full CXC or GCE certificate. Overall, there is little doubt that the introduction of vocational subjects into secondary schools significantly increases student costs.

5.34 With regard to the employment effects of vocational education, a small number of tracer studies were conducted over the past decade, mainly in the early

1980s. Bennett (1979) followed up graduates of Jamaica's New Secondary Schools, some of whom had pursued the vocational stream and some who had not. Unfortunately, this was a period when Jamaica was experiencing negative rates of growth of GDP. The 82 percent overall youth unemployment rate precluded the study from making any meaningful comparisons. The major study in Guyana dates from the same period (Abdulah, 1981). Her approach was to analyze the labor market experiences of over 5,000 young adults. The results of possessing a skill were mixed. On the one hand, it made little difference in the probability of obtaining a job; and a quarter of the group of skilled people claimed to be totally unproductive (unemployed). On the other hand, only one-third of those with training had never worked at their specialty (two-thirds of those under 20 years old), and the motivation to find work was much higher than for those with no training. More recent evidence is available for Trinidad. Two studies (Lewis, 1983; Lewis and Richardson, 1984) followed up samples of vocational and non-vocational graduates from 10 senior comprehensive schools. The graduates had been in the labor market for two to three years and their experiences strongly demonstrated that members of the vocational group were performing more successfully. Waiting time to find the first job was significantly less (7.9 months against 11.4 months) and the proportion gainfully employed was much higher (71.4 percent against 48.4 percent). The second study corroborated the findings of the first and also demonstrated higher incomes for the vocational group. A more recent study slightly modified these results (Chin-Aleung, 1988). While the motivation to seek employment was again higher among craft students, the differential in waiting time for craft and non-craft students was smaller than that previously reported (7.9 months for craft students versus 9.6 months for academic stream students). Importantly, given the significant differences in unit costs described above, salaries for the two groups showed little difference--TT$634 a month for craft graduates and TT$624 for academic stream graduates.

5.35 While relevant evaluation/tracer studies relating to school programs offering vocational subjects are few across Caribbean countries, the results of existing studies suggest that: (a) where levels of unemployment are generally high, vocational education will not significantly increase employment chances; (b) training appears to positively affect the motivation to seek employment; and (c) in periods when the labor market is not depressed, graduates with skill training find it easier to find employment, although there is little increase in earnings relative to academic stream graduates. Costs of vocational education are substantially higher. These results are corroborated by evidence from many other countries. Generally, labor market outcomes show little improvement, the costs may be doubled, and the level of general educational achievement suffers. These conclusions need to be carefully assessed by governments on the verge of increasing diversified curricula in post-primary schools and by those already operating such programs. If vocational subjects are to be taught (on the grounds that alternatives are scarce, particularly in the very small countries, at the tertiary level or via in-firm training, consideration might be given to concentrating such instruction intensively in the final year of secondary schooling. To argue against a large vocational stream in secondary school does not reflect opposition to the teaching of science and technological principles. Rather, it recognizes the greatly increased financial cost of workshops and the opportunity costs (in terms of learning general principles) of spending significant amounts of time learning some specific occupational skill. Where facilities already exist, there is generally a need to more fully utilize such capacity by extending courses to groups other than secondary school pupils.

C. Resources and their Use

5.36 Unit costs of secondary education in the Caribbean tend to be around twice those of primary education as shown in Table 2.6 of Chapter II. Among the more wealthy countries, the differential is the smallest, implying less variation in the quality of teachers and materials. Among the richer countries of the Region, expenditures on secondary schooling are around 40 percent of total educational expenditure, and between 25 and 30 percent in those where primary shares are greater.

5.37 The average costs of secondary schooling within each country mask substantial variations between different types of secondary schooling. In summary, in Jamaica secondary high school unit costs are three times greater than for all-age schools, and are 50 percent higher than for new secondary schools. The figures also are misleading, as they cover government expenditures only. As observed in Chapter II, many Caribbean countries have a dual structure of secondary schooling with government schools operating alongside schools owned and managed by the various churches and other groups, and assisted by government subsidies. Assisted schools appear to reduce substantially public expenditures. For instance, public expenditures per student in assisted secondary schools were 13 percent below the average unit cost in St. Lucia and 33 percent below in St. Vincent in 1988 (Caribbean Development Bank, 1990b). Further, according to data from the World Bank (1989a), overall unit costs in Belize are substantially lower in non-government than in government schools, i.e., Bz$784 and Bz$954, respectively. Apparently, the lower overall costs of aided schools also include substantially higher proportions spent on instructional materials, supplies, and maintenance. A more extensive study of how school types influence educational attainment across Caribbean countries could provide useful policy guidance, given that the few existing studies indicate variations in achievement by school type and management, yet the evidence from a smattering of studies is that variations in resource levels and patterns between school types are often substantial.

Teachers

5.38 As is the case in primary schools, student/teacher ratios in secondary schools in the Caribbean (excluding all-age primary schools) are substantially lower than those in countries in other regions at similar levels of development. Existing ratios are highlighted in Table 5.9.

Table 5.9: CARIBBEAN - STUDENT/TEACHER RATIOS IN SELECTED COUNTRIES EARLY 1980s

Antigua	14	The Bahamas	17	Dominican Rep.	31
Dominica	19	Barbados	18	Haiti	28
Grenada	21	Belize	15*	Suriname	17
St. Lucia	18	Guyana	19		
St. Kitts	15	Jamaica	20		
St. Vincent	17	Trinidad	20		

*Note: Belize data are for 1990.
Source: Government education statistics.

5.39 As noted, the median ratio for English-speaking countries is 17 and in no country is it above 21. Many pupils, however, remain in the all-age schools, where ratios tend to be in the mid-20s. Ratios in Haiti and the Dominican Republic are much higher and similar to the median for middle-income African countries (30). In the OECS countries, the low student/teacher ratios are countered somewhat by the relatively low proportion of trained teachers. The proportion of all teachers who are university graduates ranges from 25 to 39 percent. Moreover, those graduates also trained in teaching skills average only about 13 percent of the total. Of the remaining teachers across the subregion as a whole, 32 percent are untrained and 68 percent have teachers college qualifications (World Bank, 1990d). Among this latter group, notably, many were trained to teach only at the primary school level.

5.40 The teacher situation in the larger countries is much better. In Trinidad only 11 percent, and in Jamaica only 4 percent, of secondary school teachers are non-graduates and untrained. However, teacher qualifications vary significantly by school type. In Jamaica, 40 percent of high school teachers are university graduates compared to 8 percent in the new secondary schools, and 2 percent in the all-age schools. However, compared to 1980, the proportion of university graduates has fallen in every type of secondary school. According to a recent review of the secondary school system (Jamaica Ministry of Education, 1990b), in the all-age schools and possibly in the new secondary schools, the majority of grade 7 to 9 teachers are trained for primary teaching and more than half lack sufficient knowledge to teach mathematics and science effectively. At the high schools, of the 40 percent of teachers who are university graduates, one-third have had no training as teachers.

Educational Materials

5.41 Supplies of educational materials are very deficient in many countries. In extreme cases, science examinations involving school-based work cannot be taken due to a lack of equipment and consumables. In St. Kitts, for example, an average of US$8 per pupil was available in 1988 for books, teacher guides, reference material, and other learning and teacher-related items. This represented less than 1 percent of total unit costs. Public expenditures on books and class materials in 1988 in Jamaica were under US$10 per student in secondary high schools, US$4 in new secondary schools and US$1.50 in all-age schools. These were equivalent to between 1.4 and 3 percent of total recurrent unit costs. Placing these figures in a wider global context, Farrell and Heyneman (1989) found that a decade ago similar categories of expenditure represented over US$230 a year in most industrialized countries and in a high-middle-income country such as Malaysia, expenditures were around US$40 per student.

5.42 A key aspect of materials' provision or accessibility is textbooks. Comprehensive data on textbook availability do not exist. However, fragmentary evidence suggests that at least in some countries the situation is not good. For example, prior to a recent major intervention by the Government of Jamaica, only 20 percent of new secondary school students owned a language arts book, 17 percent a mathematics text, and only 2 percent a science book (Bell-Hutchinson, 1988). In the Jamaican all-age schools, which do not benefit from a new textbook rental scheme, it is reported that the 1988 situation still prevails. Guyana suffers from an acute shortage of textbooks, as confirmed by a UNDP survey in 1988. A survey of secondary schools in the Dominican Republic indicated that just 17.5 percent of students owned a mathematics textbook in public schools, compared to around 60 percent in private schools (Jimenez *et al.*, 1989). In all Caribbean countries, the escalating costs of textbooks make it increasingly difficult for parents and governments to continue to provide them. Many of the books are still imported and a full set can cost US$150-200 per year. The higher figure represents almost 50 percent of average annual income in Guyana and roughly 10 percent in the OECS territories. The situation is particularly acute in the senior classes of the all-age primary schools. Parents, and to some extent governments, give priority to children who have obtained a place in secondary school when it comes to investment in textbooks. Children in these schools also usually come from lower-income families who cannot afford to buy books.

5.43 Commercial textbooks are usually designed for students who will eventually take CXC examinations. A survey in Jamaica revealed that in Grades 7, 8 and 9 of secondary school (i.e., the first three years), 42, 39 and 36 percent, respectively, of students would not be able to make full use of commercial textbooks provided because of deficiencies in literacy and numeracy (Millin, 1989). It is likely that available books will be even a less effective teaching tool in the senior classes of the all-age schools since skill levels of such students (based on common entrance performance) are generally poorer. Many schools attempt to improvise by using textbooks and readers designed for the primary schools. It is not uncommon to see books designed for the typical nine-year-old primary school child being used in the first three years of secondary and all-age schools by students who are five years older. This approach has two drawbacks. First, these improvised texts are often inconsistent with the prescribed secondary curriculum. And second, the context of the book is usually socially inappropriate for the maturing adolescent.

5.44 Regional governments have recognized that existing secondary school textbooks (and related curricula) are not appropriate for a large proportion of the secondary school population. Several national initiatives are currently underway to address this problem, including the Jamaica Secondary School Textbook Research and Development Project and subregional efforts by the OECS Pre-Vocational Curriculum Working Parties. Joint ventures with commercial publishers to translate these efforts into textbooks for students in the middle and lower-ability bands of secondary school might be most appropriate. If some regional standardization could be achieved, there may be economies of scale in production and purchase, with very specific national requirements being met by local printers. This would require cooperation from the assisted schools.

Time Allocation and Curriculum

5.45 Teachers and educational materials are two important inputs to achieve curriculum objectives. Time is also necessary. There is considerable variation in time allocations for different subjects at the secondary level. The allocations are influenced by availability of staff, facilities and examination requirements. Schools tend to have considerable leeway in determining the school timetable within broad guidelines set by governments. A survey of UNESCO studies on Caribbean countries suggests typical timetables for various schools, education streams and levels as presented in Table 5.10. Most noticeably, the amount of time devoted to English and mathematics declines as students move from primary through secondary school. Whereas in primary school, 56 percent of the timetable is devoted to these two subjects, this drops to 30 percent by Grade 9 (Form 3) and to 20 percent for most students in the fourth and fifth years of secondary school. In the all-age schools, the allocation for English remains comparable to that in the primary schools and is considerably higher than the allocation in the secondary school (30 percent versus 16 percent).

Table 5.10: CARIBBEAN - TIME ALLOCATION BY SCHOOL TYPE AND SUBJECT (percent)

School Type	Grade	Stream	Eng.	Maths	Social Studies	Science	Prac. Subj.
Primary	5	-	34	22	9	8	27
All-age School	9	-	30	15	10	10	35
Secondary	9	-	16	14	15	13	42
Secondary	10/11	CXC; Arts	20	10	20	10	40
Secondary	10/11	CXC; Sci.	10	10	10	30	40
Secondary	10/11	non-CXC; Tech.	10	10	10	10	10

Source: UNESCO reports (various years 1982-85).

5.46 This study already has highlighted the low levels of attainment in literacy and numeracy for many students entering and leaving secondary school. In addition, the inability to read and enumerate accurately reduces students' ability to learn other subjects effectively. As noted above, roughly 40 percent of the textbooks in Jamaican secondary schools cannot be used effectively because of weak literacy and numeracy skills. One possible response to redress this situation may be to increase the time allocated to teaching English and mathematics. There is some evidence in support of this approach for English. The annual survey of literacy levels of Trinidadian students enrolling for SERVOL skills training programs indicates higher levels of literacy among all-age school students than among those graduating from secondary schools. A recent textbook readability survey in Jamaica suggests that the reading levels in many all-age schools at the end of the third year are superior to those in the new secondary schools (Hodge and Goldborne, 1990). One contributory factor could be the higher proportion of time devoted to English in these all-age schools.

5.47 The time allocation to science is also low. In the first three years of secondary school, only an average of 13 percent of the timetable is devoted to science. When combined with mathematics, the total allocation is less than 30 percent. Many Caribbean countries are presently diversifying the curriculum at junior secondary and senior secondary schools. This could place increased pressure on the core curriculum and result in a further decrease in the time allocation for English, mathematics, and science. Literacy and numeracy rates could fall still further, with students less prepared for the effective learning of technical and other practical subjects.

Physical Facilities and Scale of Secondary Schools

5.48 Throughout the Region, many secondary schools are in poor physical state. Overcrowding, shortages of school furniture, and growing dilapidation of buildings as a result of decreases in maintenance work are common in many countries. While attributable in large part to budgetary constraints, school location policies have also had a deleterious effect on physical facilities.

5.49 Political pressure on governments to increase secondary school places has been widespread and community-based. While in Barbados and Trinidad the average secondary school has around 1,000 students, in many Caribbean countries political pressures have led to a proliferation of small secondary schools serving local communities. For example, Belize has 28 secondary schools for a secondary school population of 7,300 students, or an average school size of 262; St. Vincent has 21 secondary schools, or an average size of 326. This situation is even more marked within the all-age primary sector. In most countries, students in all-age primary continue their studies in primary schools. This leads to a large number of widely scattered small units. For instance, Jamaica has 493 all-age units with an average size of 127 students. In Grenada, the unit size is roughly 50. While this distribution can bring some social benefits and ease access by lowering transport costs, it also reduces opportunities for economies of scale in the use of resources and limits curricular offerings. Furthermore, it undermines effective supervision and inspection of secondary and all-age schools by headquarters staff. Given the resource demands of attaining desired increases in access to secondary schooling in the Region, increased attention will need to be focused on reducing the number of dispersed small schools and hence lost economies of scale.

5.50 From the first year of study, many secondary schools operate a rigid system of streaming according to ability, with little focus therefore on teaching within groups spanning different ability levels. Streaming becomes even more prevalent in the fourth and fifth forms for both core and optional subjects, the latter usually including only one science course and technical-vocational subjects. This subdivision of classes linked mainly to examination requirements increases as students advance in grade. Class sizes of 5 to 10 are not uncommon in the fourth and fifth years, particularly in technical subjects.

5.51 The number of entrants to discrete CXC examinations in 1989 provide evidence of the prevalence of small class sizes throughout the Caribbean (Table 5.11). For example, in Art and Craft 8 out of 13 countries entered less than 10 students, and in all 489 students from 80 schools, or roughly 6 students per school, took this General Proficiency. For Craft, there were less than five entrants per school. Candidates fall into two distinct test groups: academic and vocational. Potential inefficiencies in the use of teaching resources can be exacerbated by the two-track entry for CXC examinations at General and Basic Proficiency if entries for each level are taught as separate groups.

Table 5.11: CARIBBEAN - AVERAGE NUMBER OF CANDIDATES PER SCHOOL CXC EXAMINATIONS, SELECTED SUBJECTS, GENERAL AND BASIC PROFICIENCY, 1989

Subject/Proficiency	General	Basic
English	82.7	...
Mathematics	70.2	...
Geography	33.5	...
History	31.4	...
Chemistry	26.4	...
Technical Drawing	17.1	5.1
Metals	9.3	2.2
Woods	8.7	3.6
Clothing and Textiles	6.3	3.3
Art and Craft	6.1	4.3
Craft	4.8	5.0

Source: CXC records.

5.52 In many Caribbean countries, the senior or post-primary classes in the all-age or junior secondary schools are still run along primary school lines. The majority of staff are general classroom teachers and few schools have a complement of subject specialists. Few if any of these schools have a full range of special laboratories and workshops. As a result, most of the all-age schools are not in a position to offer a typical secondary school curriculum, with common areas of deficiency being individual sciences and modern languages. Although many countries are taking steps to enrich the all-age curriculum, it generally remains deficient in comparison to that of secondary schools. In fact, students who transfer to a true secondary school normally have to repeat the third or even second form because they lack preparation in some core subject areas.

D. Enhancing the Quality of Secondary Schooling

5.53 In general, the principal areas in which policy interventions might best improve the quality of secondary schooling are similar to those discussed for primary schooling. These include: (a) improving the curriculum, particularly for non-CXC students; (b) increasing the availability of well-designed learning materials; (c) increasing instructional time in core subjects; and (d) enhancing the effectiveness of teachers. Attention to school organization may also be particularly fruitful at this level as a means to enhance quality of education. The question of expansion of coverage also arises. These areas are discussed below.

Secondary School Expansion

5.54 Some smaller Caribbean countries have already achieved 100 percent progression rates to full secondary education, while others, such as Barbados and Trinidad, are hovering around 80 to 95 percent. For this latter group, the move towards universality could be accelerated if steps were taken to reduce unit costs per pupil. This might be achieved through creating larger classes (especially in the fourth and fifth years) and streamlining the curriculum and reducing the range of options, especially in technical-vocational subjects. St. Kitts and Nevis is close to achieving universal secondary schooling, through a combination of consistent policies and major investments in expansion, supported by the donor community over the past 20 years (See Box 4).

5.55 Reorganization of sixth-form provision through the introduction of a sixth-form college or incorporation of sixth-form enrollment into existing tertiary institutions is a further option. This would release additional secondary school places and contribute to reducing unit costs in the secondary schools, since sixth-form classes are often small. For those territories with lower secondary schooling progression ratios, these same measures could be adopted to expand secondary education without increasing costs. In many of the smaller Caribbean territories, a complementary measure could be to examine ways of amalgamating some of the smaller secondary schools or sharing specialist resources with nearby all-age schools.

Box 4 - SECONDARY EDUCATION IN ST. KITTS AND NEVIS

St. Kitts-Nevis is very close to providing universal secondary schooling--a significant educational achievement. The Government's Education Act of 1966 provided for equality of educational opportunities for all children. By 1970 the 11+ common entrance examination was abolished and children with varying abilities and differing levels of academic achievement were brought into the secondary system. In place of the 11+ examination, Government decreed automatic promotion and transfer to High Schools for students attaining the age of 12 years by August 31 of any given year. Late developers, age 14+, if interested, were given the opportunity to benefit from CXC programs. Provision was also made for the transfer to High Schools of any pupil below eleven years whose academic achievement was determined by continuous assessment over the previous two years.

Primary schools are zoned, and students can only attend the nearest comprehensive High School in the area where they live--a policy which promotes equity of access and discourages the emergence of prestigious and non-prestigious schools. The Government has built Comprehensive High Schools in virtually all neighborhoods and now has a total enrollment of some 4,000 students (95% of the high school age cohort) in seven schools. Only about 200 children are in two remaining All Age Schools and the Government plans to phase them out over the next three years. Free transportation is provided to and from schools daily. Only in very exceptional circumstances is permission granted for a student who lives in one geographical zone to attend a school in another.

How did the Government succeed in extending secondary education to virtually all students? First, it created secondary modern schools by merging the tops of adjacent, single sex Boys and Girls' Elementary Schools into co-educational institutions (these provided alternative opportunities to the coveted Grammar School for Boys and High Schools, that were only established in the nation's capital). Second, it upgraded the secondary modern schools, which by the mid 1960's were established in all the major population centers of both St. Kitts and Nevis. Third, through the British, Canadian and American governments, St. Kitts and Nevis secured grants for school construction and obtained qualified teachers on two or three years assignments to fill the growing need for staff in almost all subjects of the curriculum. Fourth, the Government itself made substantial investments in land, furniture and equipment and staff development.

St. Kitts offers two levels of secondary education. Students at the lower ability range usually only advance to the fourth form and obtain a National Certificate of Education (NCE), awarded upon satisfactory completion of a national school graduating examination. The examination is administered by the Ministry of Education and marked by panels covering 15-16 subject areas. Some 250 students take this examination annually. The second level goes up to the fifth form after which students take the CXC examination. 673 students were enrolled in the fifth form in 1991, a significant increase over the 1990 figure of 598. Significantly, the growth in secondary school enrollments has apparently not lowered the quality of education. St. Kitts and Nevis has the highest level of literacy in the Region and its CXC and GCE results rank among the highest in the Region.

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5.56 In several countries, the all-age schools will be in operation for some time to come. Many of the existing units are small, with scope for amalgamation to reduce unit costs. St. Vincent is already taking steps along these lines with a program to centralize the existing 58 all-age sections into 20 larger units. Concomitant with consolidation of small all-age schools, another useful measure for containing unit costs is to share technical-vocational facilities among a number of nearby feeder schools. Students are bussed to central facilities on a daily basis. Several countries (notably Antigua, St. Vincent, Dominica, Grenada, Belize) are adopting this strategy.

5.57 A more radical approach for achieving a major expansion in secondary education would be to increase the use of distance-education methods using a combination of written materials, radio broadcasts, and correspondence techniques. A combination of self-study and radio broadcasts could be supplemented by supervised study in community centers, secondary schools, tertiary institutions, and extramural centers. In the past, Caribbean countries have used United Kingdom correspondence colleges such as Wolsey Hall and Rapid Results. Gradually these institutions have been replaced by part-time evening classes in secondary schools and University of West Indies Extra Mural Centers. The typical correspondence student has been one who wishes to repeat CXC and O-level work which was failed in secondary school to improve further education and employment opportunities. Few of the programs specifically target all-age school and junior secondary school graduates who wish to enroll in CXC programs for the first time.

5.58 In countries with low progression ratios to secondary education, distance education could be used to increase educational opportunities for those who leave school after three years of post-primary education. For the unemployed it could be organized on a full-time basis; for those who work, on a part-time basis. Governments may wish to encourage the establishment of private correspondence schools. Other options are the use of secondary schools (many of which close in the afternoons and evenings) and strengthening of continuing education departments in tertiary colleges. The Grenada National College's continuing education division is developing this approach. Through a system of parish centers with parish coordinators, local facilities and teachers are used to provide CXC classes and skills training programs for more than 1,500 youths and adults annually, with participants paying a range of fees. These programs are being packaged as foundation courses to facilitate entry into higher level courses at the National College. A further advantage of this outreach is that it provides access to education for students in rural, often remote, areas who would find it difficult and costly to attend classes in urban centers. The costs represent only a fraction (between 5 and 15 percent) of full-time secondary school education.

Curriculum Development

5.59 A contributory factor to the relatively high unit costs of secondary education is the diversity of curricula operating both within and between schools. This particularly occurs in the upper forms of secondary education, where there can be three or even four streams or sets, leading to CXC General Proficiency, CXC Basic Proficiency, national school graduating examinations, and remedial groups. Within schools, this diversity can lead to small class sizes and low occupancy rates for classrooms and specialist facilities, which in turn produces low student/teacher ratios and high unit costs. Between schools, this results in inefficiencies if students have to transfer (courses frequently have to be repeated) and reduces opportunities for bulk purchase of textbooks, equipment, and other materials. This diversity also reduces opportunities for school consolidation and sharing of facilities. Furthermore, it acts against rationalization of teacher deployment and training and the management of internal and external examinations.

5.60 While some ability grouping may be necessary for effective teaching, considerable scope appears to exist for standardization of the secondary curriculum and examinations at least at the national level and potentially at the regional level. One immediate measure would be to move towards a common core curriculum in the first three years of secondary education (grades 7-9 in most countries). The core (perhaps initially consisting of mathematics, English, science and social studies) could be linked to criterion-referenced tests at the end of this phase. Such an arrangement would help to rationalize the use of resources, provide for better monitoring of school and student performance, and facilitate decisionmaking regarding student placement and transfer. Jamaica, for example, is presently planning the implementation of this approach. Consideration might be given to the development of a regional core curriculum that would aid the development of more cost-effective educational materials and permit assessments of academic achievement among the countries in the Region.

5.61 In many Caribbean countries, the final two years of secondary education are geared to the CXC examination. In Trinidad up to 70 percent of secondary school students take at least one CXC examination. However, including the basic proficiency, these examinations are not designed to cover the full ability range. In Jamaica, less than one-third of secondary school students take them. As secondary school coverage increases, the CXC, as presently designed, may be inappropriate for an increasing proportion of the secondary school population. Alternative approaches to extending CXC exams to the whole 17+ age cohort, thus covering the full ability range, have been under exploration over the past decade. One such proposal is that of Clive Borely of Trinidad and Tobago, prepared for CXC in 1985.

5.62 Recognizing that CXC examination syllabi are not appropriate for all pupils, several countries have begun developing separate programs for the non-CXC group. Those most advanced are the United Kingdom affiliates which have devised prevocational programs aimed roughly at the bottom half of the secondary school population. Prevocational programs should be viewed cautiously as a long-term solution. First, development of separate programs for the less able may reinforce the perception of them being second-rate, particularly if the programs are not externally validated. Second, a separate track undermines opportunities for optimizing the use of physical and teacher resources in individual schools.

5.63 Another option to cover the wider ability range might be the development of national senior secondary school curricula, building on the proposed core curriculum in the junior forms. The curriculum could be designed to cover all students now entering secondary schools. Student performance could be standardized nationally and linked to the award of a national secondary school diploma or graduation certificate.

Governments could use the services of the CXC to assist in regional standardization. A related measure could be to revise CXC syllabi to cover the whole ability range, with the introduction of a revised grading system. This could be similar to recent changes in Britain where a national curriculum with a single grading system has replaced the previous two systems. There seems to be an obvious need for national education systems to respond more effectively to the average and below-average student, but a great deal of consideration should be given to determining an alternative approach.

Learning Materials

5.64 A major step towards increasing textbook availability would be to make them more affordable. For existing textbooks this might be achieved by a move towards licensing local or regional printing of books published outside of the Region. The Jamaica Primary Textbook project (summarized earlier in Box 2), provides a useful model. Textbook costs could be further reduced if regional governments were to standardize the textbooks used in schools to facilitate larger printing and bulk purchase. This may be especially appropriate for core curriculum subjects. Lower-volume texts could be printed by smaller local printers or curriculum development units. A related measure would be to encourage a second-hand market in books managed by schools, booksellers, or government outlets.

5.65 In instances where governments, schools, or private sources can afford the initial capital outlay, another approach could be to institute book rental schemes. Parents would pay an annual rental charge that takes account of the initial purchase price and the estimated lifetime of the book. This approach not only spreads the cost over time, but also generates a revolving fund for replacement of the book stock. The Jamaican Secondary School Textbook project is an example of this approach. This project, begun in 1988/89 and funded by British aid, initially covered the importation of 500,000 textbooks in language, mathematics, and science and covered 143 secondary schools. The second phase involving 620,000 books for general and vocational subjects took place in 1990/91. Parents pay between US$2.70 and US$3.60 per book, which is around one- third the previous cost. By the end of 1991, the fund was expected to total J$15-25 million with which schools could begin to replenish stocks. Prior to the scheme, only 1 child in 10 at the new secondary schools possessed textbooks for the three core subjects. Since the adoption of the rental scheme, a reported 50 percent of secondary students have access to textbooks. Again, as for primary schooling, increased textbook provision needs to be accompanied by an increased supply of learning materials in general.

Time Allocation

5.66 To guarantee and improve students' grounding in core subjects in the first three years of secondary school, the introduction of minimum time allocations might be useful. For example, the new national curriculum in Britain specifies a minimum allocation of 20 percent to language and 10 percent each to mathematics, science, and social/environmental studies. The common curriculum presently being developed in Jamaica for grades 7 to 9 is generally consistent with this approach. In the upper-secondary forms, curriculum diversification is likely to mean more pressure for specialization driven by examination requirements. Especially for those students who do not take CXC (and have poorer basic skills), policy-makers could consider setting minimum time allocations for the core subjects, while still allowing some flexibility and choice. This balance could be achieved by adopting a thematic, topic-based approach in the curriculum.

Teacher Effectiveness

5.67 In addition to access to basic physical facilities and educational materials, teacher effectiveness depends largely on their training and morale. Distinct teacher training issues appear to exist between small and larger Caribbean countries. The former group of countries suffers from an acute shortage of teachers with adequate subject knowledge and training. Until OECS representation at UWI increases, most new teachers will be trained within the multidisciplinary colleges being created. As earlier noted, most islands face already relatively low pupil/teacher ratios, quite high transition rates from primary to secondary school, and projected declines in the secondary school age group. Hence, no major increases are envisaged in the total number of teachers in the OECS. Increased attention will need to be given, however, to professional training of those already employed in the school system (OECS 1991). Given the current problems of providing substitutes to enable existing teachers to attend full-time courses, an array of part-time in-service programs may need to be put in place.

5.68 Teachers in the large countries tend to be better qualified than those in the smaller islands. However, in some countries such as Jamaica, the proportion of university graduates is declining. Under these circumstances, levels of subject competence will need to be raised in the training offered at teachers' colleges. The problem is somewhat circular, however, since these colleges sometimes have difficulty in filling their places with qualified secondary school graduates. If the recommendation to fully universalize secondary education around a common core curricula is put into effect, additional trained secondary teachers will be needed as the all-age and similar types of post-primary institutions with higher pupil/teacher ratios are transformed into or replaced by secondary schools.

5.69 Raising teacher morale will require action on several fronts. Much of the reductions in real education expenditures have translated into lower real salaries. Apart from general increases in salaries, there is also a need to reform personnel structures to provide longer promotional ladders and other incentives to remain in the profession. Perhaps equally important in some countries is improving the physical condition of school facilities so that teachers as well as students can have a pleasant and productive environment within which to teach and learn.

School Management

5.70 Improving the quantity and quality of teachers, educational materials and physical facilities and strengthening the curriculum are insufficient in themselves to attain desired high levels of school effectiveness in the secondary system. Growing cross-national evidence, coupled with the few examples given earlier in this Chapter, suggest that schools with similar input levels may vary significantly in effectiveness. An important factor appears to be how schools are managed. Much evidence suggests that the degree of decentralization is crucial, in the sense of making schools (teachers, management boards) responsible for learning outcomes and allowing them the authority to make decisions. To be effective, the responsibilities for outcomes must be linked to some form of incentive (and penalty) system and the degree of authority must be at such a level that initiative is encouraged.

5.71 The challenge for government schools in particular is how to achieve school-based management in a system where finance is centralized and teachers are selected and evaluated centrally. As a minimum, for head teachers to be held responsible for school effectiveness, they need to have some control over the basic inputs into the learning process, including: teacher evaluation and discipline; student feedback, rewards and discipline; mobilization and use of community contributions in support of the school; and school maintenance. Within such a school management regime, ministries of education would be able to shift more of their attention away from control and towards supporting schools. Such a revised ministry role would include responsibility for the development, evaluation, and dissemination of teaching materials and pedagogical techniques and staff development. It would also require that increased attention be given to developing means to assess the effectiveness of schools so as to provide support for those achieving below the average. Concentrating on these types of responsibilities would require changes in the organization of ministries and the development of new types of expertise. As a prelude to increasing autonomy in schools, a study comparing the management of assisted and government schools in the several countries where both exist might be illuminating.

5.72 A school system that offers schools incentives for high student performance must have available tools to enable performance to be meaningfully and objectively evaluated. Measures of student performance can also be useful if designed in ways that provide a basis for diagnosis of problems and importantly their resolution. Presently in the Caribbean, achievement is generally judged only through the common entrance, CXC, and other school graduation examinations. The new assessment programs in Jamaica and St. Kitts for primary pupils are currently the only ones of their kind in the Region, though several other countries are expressing interest. Barbados has designed diagnostic reading test kits. Ideally, both for purposes of assessing how an individual student is progressing and for making judgments about the relative effectiveness of different schools, achievement tests should measure learning added. If test scores are simply compared between schools this provides a false indication of performance. In principle, the measurement of learning-added could be achieved by testing cohorts annually. In practice, as the current British experience indicates, this is likely to be too time consuming and distract teachers from their primary purpose. More work on developing appropriate school achievement measures needs to become a priority across the Caribbean. Experience with the new testing program now being planned in the Dominican Republic should be carefully evaluated by the English-speaking countries.

E. Policy and Investment Options

5.73 The principal policy and investment options for enhancing access to and quality of secondary education in the Caribbean are outlined below.

1. Across the Caribbean, serious consideration should be given to replacing the current secondary school system--which offers some form of access to relatively high proportions of the relevant age group yet concentrates resources on a minority--with a new system that offers all students a meaningful secondary education. Initially, this will very likely require the development of a common core curriculum in the first three years of secondary school. There may be advantages in developing a regional approach.

2. There is also an increasing need to focus on the final two years of secondary schooling to ensure that the curriculum can cover the fall ability range. One option might be to develop a national senior secondary school curriculum designed to cover a wider ability range leading to a national secondary school diploma, with perhaps regional standardization. Alternatively, at the senior level, CXC syllabi might be revised to cover the whole ability range and a revised single grading system could be introduced. CXC should be invited by the Caribbean governments to develop proposals for modifying the current examination system to cover the full ability range.

3. Consideration should be given to reducing the costs of secondary schooling by amalgamating pupils from all-age schools and increasing the sharing of technical facilities among schools. Other cost reduction measures might include creating larger classes in forms four and five by streamlining curricula and reducing the range of options in technical-vocational subjects.

4. Increasing the use of distance-education methods combining self-study and radio with supervised study in schools, community centers, etc., and other nontraditional opportunities for learning is a promising option for expanding access to secondary education. Encouraging the establishment of private correspondence schools and strengthening continuing education departments in tertiary institutions to facilitate entry to tertiary institutions might also be considered.

5. Further standardization of basic textbooks nationally and regionally would enable larger print-runs and bulk purchases; development of materials for the average and below-average student should be given serious attention;

book rental schemes might be expanded to facilitate the generation of revolving funds for further purchases, and establish budget guidelines (norms) for educational materials with Ministries of Finance.

6. Consideration should be given to increasing head teacher and school management responsibilities for teacher evaluation, training and discipline, student evaluation and school maintenance, and experimenting with devolving financial resources to the school level.

7. Raising the level of subject matter teaching in teachers colleges would facilitate implementing the new common core curriculum. Continuing to boost in-service teacher training programs as ways of both improving teaching and raising the morale of teachers would also improve quality of secondary schooling. Also, review of salary structures would appear desirable to introduce promotional steps.

8. Commissioning research on the determinants of achievement, designing and implementing diagnostic achievement tests, and strengthening the evaluative abilities of ministries would all contribute to improving the quality of secondary schooling.

CHAPTER VI

TERTIARY EDUCATION AND SKILLS TRAINING

6.1 In the Caribbean, as elsewhere, the tertiary and skills training sub-sector cannot be easily characterized. Here it is defined as those programs offered after completion of (or dropout from) the senior classes of the all-age primary schools and the junior and senior secondary schools. Tertiary institutions offer full and part-time enrollment in teacher education, technical-vocational programs and GCE A-level, in community colleges, teachers' colleges, technical institutes, polytechnics, and in the sixth year (forms) of secondary schools. The subsector also includes formal and non-formal skills training programs offered by public institutions, employers, private institutions, and non-governmental organizations.

6.2 This subsector must respond to changes in the structure and output of the secondary school system and the requirements of universities in addition to changing labor market requirements. Ensuring the effectiveness of tertiary education and skills training programs is crucial if Caribbean countries are to develop an adequate supply of skilled labor into the twenty-first century. To meet the challenge, Caribbean governments will need to carefully screen system coverage and access to assure appropriate quality and effectiveness and achieve the best use of resources.

A. Coverage and Access

6.3 The growth and patterns of enrollment in tertiary education and skills training are described below. Limitations on access and coverage and constraints to future growth are also discussed.

Enrollment Growth and Patterns

6.4 Enrollments in public tertiary institutions in the English-speaking Caribbean increased from 15,000 in 1970 to 30,000 in 1980 and rose to 41,000 in 1989 (Table 6.1). In all but two countries (Guyana and St. Kitts-Nevis) enrollments at least doubled and in six (The Bahamas, Grenada, Barbados, Belize, Jamaica, and Montserrat) they tripled. In general, increases were greater in the 1970s (averaging 9.6 percent a year) than in the 1980s, when annual growth averaged 4.2 percent. However, this growth trend needs to be placed in perspective. In the Caribbean enrollments grew much less rapidly in the 1970s and at a similar rate in the 1980s (Table 6.2). Growth in post-secondary enrollments outside the major tertiary institutions has also occurred in the last decades, largely in response to the increasing numbers of unemployed youth. Governments have expanded short-period youth skills training programs to a current enrollment of between 50,000-60,000, and other adult and continuing education programs have an estimated enrollment of 70,000 to 100,000 across the English-speaking Caribbean.

Table 6.1: CARIBBEAN - ENROLLMENTS IN TERTIARY INSTITUTIONS, SELECTED COUNTRIES 1970, 1980, AND 1989

	Country	1970	1980	1989	Percent increase 1970-80	Percent increase 1980-89	Percent increase 1970-89
1	Antigua/Barbuda	200	270	530	35	96	165
2	The Bahamas	800	3,800	4200	375	11	425
3	Barbados	800	4,000	4500	400	13	463
4	Belize	300	700	1350	133	93	350
5	Dominica	200	280	430	40	54	115
6	Grenada	150	500	540	233	8	260
7	Guyana	3,000	3,500	3800	17	9	27
8	Jamaica	4,800	10,000	15000	108	50	213
9	Montserrat	30	80	140	167	75	367
10	St. Kitts-Nevis	200	260	364	30	40	82
11	St. Lucia	300	480	702	60	46	134
12	St. Vincent	200	330	404	65	22	102
13	Suriname	1,000	2,400	4300	140	126	330
14	Trinidad/Tobago	4,200	5,600	9100	33	63	117
	Total	16180	32200	45360	100	41	180

Note: These figures do not include vocational training centers, skills training units, and adult education programs.

Source: Ministries of Education statistics. Suriname data combines tertiary and university enrollments.

6.5 Over time, there have been changes in the pattern of tertiary enrollments. During the 1960s and 1970s, as English-speaking Caribbean governments achieved independence, more self-sufficiency in manpower became a priority, and A-level success and entry into a university were considered the route to a career in the professions and politics. Similarly, as governments expanded access to primary and secondary education, more teachers were required. Technical education ranked low in the order of priorities, and several smaller Caribbean countries had no technical college until the 1970s.

Table 6.2: CARIBBEAN - GROWTH RATES IN TERTIARY AND HIGHER EDUCATION
CARIBBEAN AND LATIN AMERICA 1970-89 (in percent)

	1970-80	1980-89	1970-89
Caribbean (Tertiary)	96	38	171
Caribbean (Tertiary and Higher)	92	36	159
Latin America Tertiary and Higher)	195	32	291

Source: Table 6.1 sources plus Winkler (1990).

6.6 A shift occurred in this pattern through the 1980s. Enrollment in A-level courses continued to rise but more slowly, while it declined in teacher education, and rose in technical-vocational programs. In public tertiary institutions across the English-speaking Region, the current distribution of enrollment is 28 percent academic, 16 percent teacher education, and 56 percent technical-vocational. There are marked differences in distribution between countries and subregions (Table 6.3). In The Bahamas technical and vocational institutions enroll over 80 percent of tertiary students while they enroll less than half that proportion in Jamaica, Trinidad, and the OECS.

Table 6.3: CARIBBEAN - TERTIARY ENROLLMENT DISTRIBUTION BY PROGRAM
ENGLISH-SPEAKING CARIBBEAN, 1989 (in percent)

	Academic	Teachers' College	Technical-Vocational
The Bahamas	14.3	4.8	81.0
Barbados	20.5	5.7	73.9
Belize	20.2	17.6	62.2
Guyana	12.1	16.5	71.4
Jamaica	26.7	25.3	48.0
OECS	34.6	17.4	48.5
Trinidad	47.3	8.8	44.0
OVERALL	28.4	15.8	55.9

Source: Appendix Table A-2.

6.7 Traditionally public tertiary institutions have concentrated on full-time academic (A-level), teacher education, and craft and technical programs leading to formal certification. Some offer these programs part-time, but evening programs are in short supply. For example, in OECS tertiary colleges only 11 percent of enrollment is part-time. Some tertiary institutions also offer evening classes for students to improve their secondary education credentials. These institutions and programs are usually managed by the education ministry. The 1980s saw a growth in pre-employment, youth skills training programs. Management arrangements vary: sometimes responsibility rests with the education ministry (Jamaica, Barbados); in others, with community development or labor ministries (OECS). Responsibility for agriculture programs and nurses' training usually rests with the ministries of agriculture and health, respectively, though in some instances management has shifted to education. Hotel and tourism training rests with the tourism ministry (Antigua) or education (Barbados).

6.8 Private institutions tend to concentrate on business and management programs and academic upgrading. Most countries have one or more private commercial schools and several countries, (e.g., Barbados and Belize) have management schools. A recent growth area has been the establishment of private schools offering computer training. The private sector is also active in providing evening classes for students working to improve their CXC qualifications. The institutions participating are diverse, including the University of West Indies Extra-Mural Centers and private classes at centers and in private homes. Another growing area within the private sector is proprietary education and small business management training. Much of this is provided through National Development Foundations (NDF), chambers of commerce and manufacturing associations, and other non-governmental organizations. Until recently, skills training for unemployed youth rested with government ministries. However, in some countries this appears to be shifting to the private sector and parastatals. Some notable examples are the HEART Trust (Jamaica) and SERVOL and YTEPP (Trinidad). Accurate data on private sector training enrollment are not available; however, such training appears to be expanding.

6.9 Some of the larger employers provide a significant amount of training. Although this is mainly undocumented, a recent survey in Jamaica provides some useful data (Caribbean Business Management, 1990). Across all firms with over 10 employees, training capacity is estimated at nearly 61,000 places, with a 70 percent utilization rate. Around 10 percent of employees receive some form of in-plant training each year while 4 percent receive external training. Three-quarters of in-plant training is fully provided internally and the rest in collaboration with outside institutions. Training is provided by 970 full-time professional trainers and 870 visiting ones. The vast majority of trainers have been recruited from public training institutions. Similar arrangements can be found in Trinidad and Barbados. One industry doing much of its own training is hotel and tourism. An example is the 'Bahamost' program in The Bahamas, which has trained 8,000 workers in the past 15 years. This represents 20 percent of the current industry work force. In-firm training appears to be growing, particularly in the financial services field.

6.10 In addition to full-time enrollment in national tertiary institutions, some students attend regional and overseas institutions. The main areas of study are paraprofessional programs in technology, business, hotel and tourism, health, public sector management, and technical school teacher education. The reasons for overseas study include the unavailability of programs nationally, more flexibility in admissions policy, and easier access to financing.

6.11 Use of intraregional training opportunities at the tertiary level occurs most frequently among students from smaller countries, especially the OECS, whose own institutions have more limited program coverage. Between 250 and 300 non-nationals annually study in regional institutions including CAST (various fields), Barbados Community College (health science, hospitality arts), Antigua State College, and Sir Arthur Lewis Community College (home economics, technical and general teacher education). For example in 1990, 149 non-nationals were enrolled in CAST, of whom 121 were from the smaller East Caribbean countries. The areas of study are shown in Appendix Table A-3.

6.12 Overseas training, mainly in the United Kingdom and North American institutions, comprises two main categories. The first is highly specialized, full-time technical programs and short courses in subjects which not offered in the Region, as part of donor-funded overseas training programs. Numbers vary with the duration and program cost. An indicative figure is between 250 and 350 students a year. For example, over a period of two years, 228 students from the East Caribbean received short-term training in the United States in areas such as hotel management, small-enterprise development, and high-impact agriculture (USAID, 1990). The second category of overseas training comprises privately financed students pursuing both degree and non-degree tertiary programs. These numbers are significant. In 1983/84, an estimated 10,900 Caribbean students studied in the USA, the majority of whom were privately financed (USAID, 1986).

Measures and Determinants of Access

6.13 Despite the diversity of programs and delivery, the levels of education and training of the work force in the English-speaking Caribbean are low. According to the 1980 census, the proportion of the work force with vocational training are: Barbados 27 percent, St. Vincent 14 percent, Dominica 9 percent, Grenada 7 percent, and St. Lucia 6 percent (Zaba, 1986). Currently, enrollment ratios in tertiary education (based on the 20 to 24-year-old-age group) range between 2.4 percent in St. Vincent and 14 percent in Montserrat and Barbados (Table 6.4). The average across the English-speaking Caribbean is 6.1 percent.

Table 6.4: CARIBBEAN - ENROLLMENT RATIOS IN PUBLIC TERTIARY AND HIGHER EDUCATION INSTITUTIONS: ENGLISH-SPEAKING CARIBBEAN, 1990 (in percent)

Country	Tertiary	Tertiary and Higher
Antigua	9.6	10.5
The Bahamas	12.7	13.7
Barbados	14.1	21.0
Belize	6.4	6.4
British Virgin Islands	4.8	6.1
Dominica	4.3	4.9
Grenada	3.4	3.9
Guyana	4.9	8.0
Jamaica	4.9	6.6
Montserrat	14.0	17.8
St. Kitts	7.3	8.4
St. Lucia	4.1	4.8
St. Vincent	2.4	2.9
Trinidad	7.3	10.7
OVERALL AVERAGE	6.1	7.8

Note: 1) These figures do not include overseas training.
2) Enrollment ratio is the number enrolled in national and regional institutions as a percentage of the 20 to 24-year age group in the population.

Source: Government and University of West Indies statistics.

6.14 If higher education is included, the range increases to between 2.9 and 21 percent, with an overall average of 7.8 percent. Combined tertiary and university enrollment ratios in several Latin American countries are given in Table 6.5. They are significantly higher than those in the English-speaking Caribbean. Broadening the comparison, enrollment ratios for all middle-income countries average 14 percent.

Table 6.5: CARIBBEAN - ENROLLMENT RATIOS IN TERTIARY AND HIGHER EDUCATION: LATIN AMERICAN COUNTRIES, 1985 (in percent)

Country	Enrollment Ratio	
Argentina	36.4	
Bolivia	19.5	(1984)
Colombia	13.0	
Costa Rica	23.0	
Dominican Republic	13.8	
Ecuador	33.1	(1984)
Mexico	16.0	
Panama	25.9	
Uruguay	31.7	
Venezuela	26.4	

Source: Winkler (1990).

6.15 High enrollment ratios for primary and secondary levels are usually associated with high ratios for post-secondary education. In the English-speaking Caribbean, however, this pattern does not hold. For instance, Barbados has the profile of an upper-middle to high-income country for primary and secondary schooling, yet its enrollment ratio for tertiary/university education is much lower than the average for this group. Other countries have the profile of a middle or lower-middle income country at the primary and secondary school level but again the tertiary/university enrollment ratio is considerably below the norm. Comparing Latin American and Caribbean norms, the English-speaking countries are similar at primary and secondary levels, but lower (apart from Barbados) in terms of tertiary/university enrollment ratios. The low levels of access in Caribbean countries are further demonstrated by ratios of secondary to tertiary enrollments (Table 6.6). Excluding the Dominican Republic, the average tertiary enrollment is equal to 7.4 percent of secondary school enrollments. For six Latin American countries, the equivalent figure is 34.3 percent.

Table 6.6: CARIBBEAN - COMPARISONS OF TERTIARY AND SECONDARY EDUCATION ENROLLMENTS: SELECTED CARIBBEAN AND LATIN AMERICAN COUNTRIES, 1985-86

Country	Tertiary Enrollment/ Secondary Enrollment Ratio (percent)
Barbados[a]/	18.2
Belize	12.5
Dominican Republic[b]/	26.6
Guyana[b]/	3.3
Haiti[2]	4.5
Jamaica[a]/	5.2
Suriname[b]/	9.8
Trinidad-Tobago[a]/	5.3
OECS[a]/	7.5
Argentina[b]/	47.0
Brazil[b]/	50.2
Chile[b]/	29.5
Colombia[b]/	20.2
Mexico[b]/	18.4
Venezuela[b]/	42.7

a/ Includes both tertiary and universities.
b/ University enrollments only.
c/ National tertiary enrollments only.

Source: UNESCO (1988); Winkler (1990).

6.16 In the English-speaking Caribbean countries the two main determinants of access to tertiary education are meeting academic entry requirements and private costs. In terms of entry requirements, the stringency with which countries apply these varies. The relationship between the number of students gaining four CXC passes (Grades I, II, General Proficiency) compared to the annual tertiary intake, provides some measure. Data in Table 6.7 clearly indicate that in the OECS countries and Trinidad access to tertiary education is more determined by the quality of an individual's secondary education than in other English-speaking Caribbean countries. High academic entry requirements (usually four or more CXC passes) are applied most strictly for A-level, teacher education and technician level programs. Given the low quality of output from secondary schools, only a small proportion of the assigned age cohort eventually proceed to A-level, the regional average being only 4.3 percent.

Table 6.7: CARIBBEAN - MULTIPLE OF "QUALIFIED" STUDENTS PROCEEDING TO TERTIARY EDUCATION, 1990

Country/Region	Annual Tertiary Intake/ Number Gaining 4 CXC 'Passes'
Barbados	3.92
Belize	5.83
Guyana	6.46
Jamaica	3.81
OECS	2.05
Trinidad	1.27

Sources: Appendix Table A-22.

6.17 Table 6.8 provides the data by country. Students with four or more CXC passes will normally opt for an A-level program if accepted by the institution. This absorbs most of the qualified output annually. For instance, in 1990, 7,200 students across the Region gained four passes and 5,000 enrolled for A level. Public institutions attempt to apply similar entry criteria for teacher education and technician (including nursing) courses. The annual capacity of these institutions is 5,000 to 6,000 students yet the number of students who qualify annually is less than half the requirement. Either the entry qualifications are lowered or the courses are not offered. The first option contributes to a decline in the quality and effectiveness of the program. The second results in the system not supplying the amount of qualified manpower the labor market may require. In the past, access to craft programs was more open, based on a desire to provide further training for primary school and all-age school graduates. As secondary school enrollment has expanded, admission tests and other entry requirements have been introduced, including 1-3 CXC passes or a school-graduation certificate in five subjects. It is estimated that roughly 30,000 students meet these criteria annually. If all applied, roughly four students would be competing for every craft place.

Table 6.8: CARIBBEAN - PROPORTION OF AGE-COHORT ENROLLED IN "A" LEVEL COURSES SELECTED COUNTRIES, 1988 (in percent)

Country/Region	Enrollment/Age-Cohort
Barbados	7.0
Belize	2.4
Guyana	1.4
Jamaica	2.6
OECS	3.5
Trinidad	8.8

Note: 1988 intake is based on half the total A-level enrollment; figures do not include Associate Degree programs.
Sources: Government education statistics; UNESCO (1988).

6.18 For government-run youth skills training programs, lower admission requirements are applied. Access is determined by the number of places available rather than by specific academic requirements. Skills training short-courses absorb 50,000 to 60,000 students. Government policy on access to adult and continuing education varies.

Some academic screening may be applied, but generally the policy is one of open access. Similar policies are adopted by private institutions.

6.19 The second determinant of access to tertiary level institutions is the ability to meet costs. In most public tertiary institutions, tuition for full-time, A-level and teacher education programs is free, with the exception of Belize and Grenada. Students enrolled in technical-vocational programs are expected to pay fees, except in Barbados, Guyana, and Trinidad. In all countries fees are charged for part-time enrollments in both tertiary and adult education classes (Appendix Table A-4). In addition to fees there are other types of private costs. In many countries parents or students are expected to meet the costs of examination fees, books, and transport, which can amount to US$400 to US$500 a year for some courses. In some countries (such as Barbados and Dominica), governments provide grants to cover some of these costs. Often these are restricted to A-level students and are not always targeted towards the financially disadvantaged.

6.20 The major limitations on access to regional institutions are again admission policies (4 or 5 CXC passes although institutions attempt to be flexible) and availability of finance. The latter is more significant. The unit cost for these institutions is US$5,000 to US$6,000 a year to cover tuition, board, books and travel, compared to an OECS average unit cost of US$1,894 for training nationally. Access to finance is limited for this kind of overseas training. The main source is government scholarships usually funded by donors. For example, 96 of the 149 non-nationals at CAST in 1988 were donor-funded, as were all of the non-nationals in the Antiguan and St. Lucian tertiary institutions in 1990. The use of student loan schemes for this level of training is very limited. In effect the major limitation on access is the amount of scholarship funding donors provide. This is even more true for overseas training, which is particularly expensive. Unit costs of a selection of national, regional, and overseas institutions providing three months training are presented in Table 6.9. These figures are only indicative; nevertheless, they provide an indication of relative costs for short-term training. Assuming national capacity was in place, a 3-, 8-, and 19-fold increase in access could be achieved by training at the national level, compared to regional, United States or United Kingdom training, respectively. Cost comparisons such as these are extremely important for determining potential to expand national and regional training provision.

Table 6.9: CARIBBEAN - COMPARISON OF UNIT COSTS OF SHORT TERM TRAINING, BY LOCATION

Source	Unit Cost (US$) f/
USA a/	5,072
UK b/	12,000
Regional (CAST) c/	2,000
National (public, OECS) d/	632
National (private, OECS) e/	750

a/ Based on USAID (1989).
b/ Unit cost, UK training short programs.
c/ Based on one-third annual cost (on assumption that academic year is 9 months).
d/ Based on one-third OECS average unit cost, tertiary institutions.
e/ Based on three-month training course, NDF, Dominica.
f/ Based on three months training.

Access by Gender

6.21 Tertiary enrollment data by gender are not available for all English-speaking Caribbean countries. Table 6.10 covers just three countries. However, it suggests that male/female ratios in academic programs vary considerably between countries, that female enrollments predominate in teacher training, and male enrollments in technical-vocational subjects. Entry to tertiary education is very dependent on secondary school academic qualification. Girls not only comprise 60 percent of the entries at CXC, they also tend to score higher grades in several subjects (see Table 6.11). It appears that girls are underrepresented in tertiary education compared to their success at secondary school. Table 6.12 indicates the ratio of tertiary enrollments to CXC entry are significantly lower for girls than for boys.

Table 6.10: CARIBBEAN - ENROLLMENTS IN TERTIARY EDUCATION - BY GENDER AND FIELD: ST. LUCIA, BELIZE, AND TRINIDAD (in percent)

	Academic		Training		Vocational	
	M	F	M	F	M	F
St. Lucia (1988)	109	105	28	141	147	94
Belize (1987)	156	111	61	173	464	374
Trinidad (1987)	1,945	2,453	108	323	2,763	1,219

Note: Full-time enrollments only.
Source: Government statistics.

6.22 Several factors may reduce women's access to full-time tertiary education. The numbers of unmarried mothers and women as household heads are increasing, which puts pressure on them to join the work force or stay at home with children. In addition, gender stereotyping may reduce incentives to enroll in courses perceived as male domains. There is some evidence of both these factors. Female enrollments in building trades and engineering courses at the College of Arts, Science and Technology (CAST), Jamaica, are only 11 percent and 3 percent of total enrollments, respectively, compared to over 55 percent in other fields (see Appendix Table A-5). Where women have access to further education through part-time evening class programs, female enrollment far exceeds that of males. For example, 75 percent of the enrollment for evening programs at St. Vincent Technical College is female (Ellis, 1990).

Table 6.11: CARIBBEAN - COMPARISON OF CXC PERFORMANCE IN SUBJECTS POPULAR AMONG MALES AND FEMALES, 1989

Subject Area	Males Awards, Grades I+II		Females Awards, Grades I+II	
Science and Technology	11,848	(51%)	11,424	(49%)
Business Education	5,597	(36%)	10,127	(64%)
Arts	10,232	(38%)	17,023	(62%)
TOTAL	27,677	(42%)	38,574	(58%)

Source: CXC (1989).

Table 6.12: CARIBBEAN - TERTIARY LEVEL ENROLLMENT AND CXC ENTRY POPULATIONS: SELECTED COUNTRIES

	Percentage of Tertiary Enrollment (1)		Percentage of CXC Entry (2)		Ratio 1/2	
	Male	Female	Male	Female	Male	Female
St. Lucia (1988)	45.5	54.5	36.0	64.0	1.26	0.85
Belize (1987)	50.8	49.2	40.8	59.2	1.24	0.83
Trinidad (1987)	54.6	45.4	41.1	58.9	1.32	0.77

Source: Government statistics and CXC (1989).

Access by Location

6.23 The better-performing secondary schools tend to be concentrated in the urban areas. For example, in St. Lucia in 1989 overall CXC pass rates ranged between 27.6 percent in a rural school and 80.3 percent in an urban school; in Dominica, all of the top seven CXC students came from urban schools. Although no definitive evidence is available, these examples suggest that fewer rural children are likely to have the entry requirements for A-level, teachers' colleges, or technician/craft programs.

6.24 Tertiary institutions are concentrated in urban areas. In the OECS territories all are located in the capital city. In Barbados, only one out of eight tertiary institutions with a sixth form is located in a rural district. Trinidad, Jamaica, Guyana, and Belize have made efforts to decentralize provision, but the pattern is still similar. Students from rural areas have to travel further and sometimes board in-town to pursue tertiary education. This increases costs. For example, out-of-town CAST students in Jamaica have to either board, at an estimated cost of US$350 to US$400 a year, or pay daily bus fares of up to US$100 a year, compared to a maximum student loan of only US$200 a year. In the Windward Islands, students can pay up to US$500 a year to travel from outlying districts to the capital. In some cases, this doubles the cost of tertiary education.

B. Quality and Effectiveness

6.25 The quality and effectiveness of tertiary education and skills training can be measured in a number of ways. One approach is to assess the proportion of entrants who successfully graduate from programs, and, where appropriate, meet the admission requirements for further education and training without need for remedial studies. A second is to examine the degree of match between the labor market and the output from the system and the performance of graduates in the workplace. These can be judged by a variety of indicators, such as job placement levels, earnings differentials, labor shortages, job vacancies, and reliance on expatriate labor.

Changing Labor Markets and Existing Programs

6.26 Labor markets in the Caribbean have changed markedly in recent years. The proportions of the work force employed in the manufacturing, construction, commerce, and service sectors (particularly tourism and finance) have increased while in agriculture, mining, and public administration they have declined. For example, between 1980 and 1987 Jamaica employment in manufacturing increased by 79 percent, construction 72 percent, services by 49 percent, and commerce by 39 percent while agriculture, mining and government service shares declined. The shifts in labor demand require that the work force acquires an increasingly higher level of education and training. The 1980/1981 census data point to the small proportions of the population of working age which had received university or tertiary education (Appendix Table A-6). Only in Barbados and The Bahamas was the figure above 4.6 percent. Since then the rate of growth of tertiary enrollments has slowed.

6.27 An ad hoc vacancy survey conducted for this study from local newspapers in December 1990 indicated significant vacancy levels. The results are shown in Table 6.13. These suggest that particularly in the smaller Caribbean territories, labor shortages are concentrated in professional, managerial and skilled occupations. Turning to specific country studies, a recent forecast for Jamaica conducted by the Planning Institute estimated annual vacancies for trained workers of between 46,000 and 58,000 a year, compared to an estimated supply of 12,500. The main shortages were for clerical and sales, services, and executive/managerial workers. In Guyana, not even allowing for out-migration, the Inter-American Development Bank (1985) estimated a shortfall of 3,500 skilled and professional/technical workers by 1995 if output from the tertiary and university system remained unchanged. Studies by Fergus (1989a,b,c) for Antigua, St. Vincent, and Grenada confirm these patterns. In Antigua, approximately 7,000 non-Antiguans (26 percent of the estimated work force) are employed, mainly in construction and tourism, as skilled or semi-skilled workers.

Table 6.13: CARIBBEAN - VACANCIES BY COUNTRY AND SPECIFICATION
DECEMBER 1990

Country/Region	Professional/ Managerial/ Skilled	Percent	Semi/ Unskilled	Percent	Total
Barbados	185	37	313	63	498
Belize	152	71	61	29	213
Guyana	128	31	284	69	412
Jamaica	331	29	808	71	1139
OECS	461	64	258	36	719
Trinidad	175	37	293	63	468

Source: Compiled from local newspapers.

They are filling a gap the present tertiary education and skills training system does not meet. In Grenada, an annual shortfall of 750 professional/skilled workers is estimated. Similar levels of deficiency are reported for St. Vincent. Turning to specific sectors, various studies have highlighted shortages of qualified labor in general management, tourism, and teaching. In spite of the inherent limitations of such economy-wide labor market and manpower forecasting analyses, the case for arguing that there is excess demand for trained labor in the region remains. For specific occupations and sectors, the case has been made more strongly.

6.28 A USAID (1985) study estimated that in the English-speaking Caribbean around 18,000 people were working as managers who had inadequate management training, while CARICAD (1986) indicated that 58 percent of middle managers had only CXC/O-level qualifications and only 12 percent had a university degree. For the hotel and tourism sector, fragmentary evidence indicates a mismatch between demand and supply. In The Bahamas, Hall (1990) reports that of a tourism labor force of 40,000, only 8,000 have received training. In Antigua, where an estimated 2,000 to 3,000 expatriates are working in the hotel industry, the output from the local hotel school is approximately 200 a year. Over the next decade estimates indicate that jobs in the hotel and tourism industry in the Eastern Caribbean could grow by 1,000 per year (World Bank, 1990d). Output from the tertiary institutions is unlikely to exceed one-third this figure.

6.29 Table 6.14 presents the number of teachers and the proportion of the teaching service classified as having no professional training in each English-speaking Caribbean country. Altogether there are over 10,000 such teachers:
6,045 primary, and 4,457 secondary. Yet enrollments in teachers' colleges declined in 7 of the 12 English-speaking Caribbean countries over the 1980s and by 31 percent overall (Appendix Table A-7).

Table 6.14: CARIBBEAN - TEACHERS WITHOUT PROFESSIONAL TRAINING, BY COUNTRY SELECTED YEARS

Country	Year	Primary		Secondary	
		Number Untrained	Percent of Total	Number Untrained	Percent of total
Antigua	1990	85	26.5	106	38.4
Barbados	1989	308	19.1	263	22.0
Belize	1990	846	48.0	396	70.0
Dominica	1989	351	56.3	136	75.1
Grenada	1988	400	52.6	216	70.0
Guyana	1989	992	30.7	444	30.6
Jamaica	1990	626	6.5	807	9.7
Montserrat	1989	26	40.0	24	31.6
St. Kitts-Nevis	1985	86	70.9	* 11	41.3
St. Lucia	1988	631	59.5	* 79	22.5
St. Vincent	1988	820	74.7	215	54.0
Suriname	1990	192	3.4	1958	48.0
Trinidad	1989	820	11.7	1759	30.0

* Based on an estimate that half the graduate teachers are untrained, as in St. Vincent.

Source: Commonwealth Secretariat (1990b); World Bank (1990d); Suriname, Ministry of Education.

6.30 The ratios of annual output to the number of untrained teachers provide a rough measure of the effort being made to train this backlog. These are presented in Table 6.15. The inverse of this "effort" ratio gives a rough indication of the number of years required to train the backlog at present output levels. For Belize, OECS countries, and Barbados it will take 25 years, 20 years, and 11 years, respectively; for Guyana 6 years. This calculation assumes insignificant attrition rates. For Guyana the loss of trained teachers is 14 percent a year (1989 figure); for Jamaica 3.3 percent (1987 figure). In some of the OECS countries, attrition rates are rising as teachers join the more lucrative private sector. A detailed analysis of demand and supply of teachers in Jamaica confirms that demand is annually outstripping present supply by around 2,000 (Appendix Table A-9). Secondary and technical-vocational teacher training capacity is especially weak. At present, none of the OECS countries offers specialized secondary teacher training programs. For technical teacher training, limited capacity for the OECS has been established in St. Lucia (Industrial Arts and Home Economics) and Antigua (Business Education), but the annual output is only 24: one trained teacher per subject per island. A recent study in the OECS (Parker, 1990) estimated that roughly 850 technical teachers needed pedagogical training.

Table 6.15: CARIBBEAN - TEACHER TRAINING "EFFORT" SELECTED COUNTRIES AND SELECTED YEARS, 1986-89

		Annual Output	
Country	Annual Output a/	Number of Untrained Teachers	Number of Untrained Teachers
Barbados	52	571	0.09
Belize	93	1,197	0.04
Guyana	252	1,436	0.18
Jamaica	846	1,433	0.59
OECS	162	3,286	0.05
Trinidad/Tobago	321	2,579	0.12

a/ Includes technical-vocational teachers.

Note: Figures for Belize are for 1990.

Sources: Table 6.14 and Appendix Table A-8

6.31 Two categories of workers are particularly important for future economic development in the Region: technologists/technicians and skilled manual workers. As Caribbean economies have become less labor intensive, workers with an understanding of modern technology have become of paramount importance in the fields of agriculture, construction, tourism, and transportation. They are at the heart of modern industrial economies as production supervisors and middle managers. The limited labor market information systems that exist indicate that many of the job vacancies are at this level. Annual output is difficult to assess due to diversity in the levels and quality of programs. Based on data from national tertiary institutions, there are between 1,200 and 1,500 technician graduates annually; Jamaica 400-500, Barbados 200-250; Trinidad 250-300; Guyana 200-250; Belize 75-100; OECS 75-100. This level of output means that improvement in the quality of the labor force is very slow. For example, as a proportion of the projected labor force by the year 2000 the annual addition of workers at this level is: Barbados (0.2 percent), Trinidad (0.1 percent), Guyana (0.1 percent), Belize (0.1 percent), OECS (0.04 percent), Jamaica (0.06 percent). In other words, it will take between 5 years for Barbados and 25 years for the OECS to increase the proportion of technicians and technologists in the work force by 1 percent at present output.

6.32 Using the output from two-year craft programs as an indicator, public tertiary institutions have only a limited impact on the number of skilled manual workers. As noted in Table 6.16, annual output represents between 0.07 percent and 0.42 percent of the work force. In terms of numbers trained, the various short-term youth skills training programs are more significant than the programs in traditional tertiary institutions. In Trinidad in 1989 nearly 11,000 students received such training before entering the labor market (3.4 percent of total work force); in Jamaica, HEART programs graduate approximately 23,000 a year (2.7 percent of the work force); and for the OECS countries, six schemes are training around 1,400 annually (USAID, 1987), representing 1 percent of the total labor force. The remainder of training at this level takes place in-plant on a formal and informal basis through employer training, government ministries, non-government organizations, manufacturers' associations, and chambers of commerce.

6.33 In summary, the earlier argument that on a comparative basis Caribbean countries have low levels of access to tertiary education is strengthened by the admittedly fragmentary evidence of shortages of trained labor, particularly at managerial, technician, and paraprofessional levels.

Table 6.16: CARIBBEAN - ANNUAL OUTPUT OF CRAFT LEVEL GRADUATES, SELECTED COUNTRIES

Country	Year	Annual Output (1)	Size of Work Force (2)	Ratio (1)/(2) (%)
Antigua	1987	89	26,500	0.33
Barbados	1980	418	98,000	0.42
Dominica	1987	77	19,500	0.40
Jamaica	1987	607	835,000	0.07
Montserrat	1987	5	4,500	0.11
St. Lucia	1987	103	31,000	0.33
St. Vincent	1987	36	25,000	0.14
Trinidad	1988	665	323,000	0.20

Note: Except for Jamaica, 1980 work force figures used; for Jamaica, 1987.
Source: OECS/EEC (1988); Barnett (1990); National statistical abstracts.

Quality of Existing Programs

6.34 Admissions policy for tertiary education is restrictive. Consequently, it might be anticipated that the quality--as measured by graduation rates, dropout and repetition, and progression to further studies--would be high. Much of the evidence, especially for A-level, teacher education, technician and craft programs points to the reverse. The quality of skills training schemes measured by placement ratios appears to be significantly better.

6.35 Annually, between 5,000 and 6,000 students embark on a United Kingdom-based A-level program. A survey of eight Caribbean countries (CXC, 1988) indicates dropout and/or repetition rates of between 10 and 20 percent which are high given the selectiveness of the intake. Overall pass rates are poor in international terms. Henry (1988) reports that between 1982 and 1984 Singapore achieved up to twice the average pass rates of Caribbean countries (Appendix Table A-10). Within the overall regional pattern there is significant intraregional variation. As Table 6.17 illustrates, despite increased numbers of CXC entrants, Barbados and Trinidad have maintained improvements in pass rates in both English and mathematics, while Jamaica and the smaller territories show signs of decline. For all subjects in 1989, the pass rates were Barbados 65 percent, Trinidad 63 percent, and Jamaica 43 percent. These compare to a British pass rate of 79 percent. The main purpose of studying for A-level is university entrance. The normal minimum matriculation requirement for the University of West Indies and British universities is two A-level passes. A low proportion of Caribbean students meet this requirement. In 1986, only 34 percent of entrants gained two or more passes (Appendix Table A-11); in Britain 76 percent of students reached this standard. A country breakdown for the number of students gaining two A-levels is not available. However, if the proportions are of the same order as those of students gaining five or more CXC passes, estimates of two A-level output by country can be obtained (see Appendix Table A-12). Using this approach, the percentage of the age-cohort gaining two A-levels can also be estimated. As Table 6.18 illustrates, those who meet the strict requirement for UWI entry range between only 0.5 and 4.2 percent of the age-cohort by country and subregion.

Table 6.17: CARIBBEAN - A-LEVEL PERFORMANCE ENGLISH AND MATHEMATICS, SELECTED COUNTRIES - 1970, 1980, AND 1989

English

	Jamaica		Trinidad		Barbados		Other Caribbean	
Year	Entry	Pass(%)	Entry	Pass(%)	Entry	Pass(%)	Entry	Pass(%)
1970	212	61.3	231	65.4	(in Other)		207	48.8
1980	311	43.7	304	70.4	101	66.3	90	40.0
1989	302	51.3	458	72.5	144	78.5	n.a.	n.a.

Mathematics

	Jamaica		Trinidad		Barbados		Other Caribbean	
Year	Entry	Pass(%)	Entry	Pass(%)	Entry	Pass(%)	Entry	Pass(%)
1970	250	56.8	273	63.7	(in Other)		139	51.8
1980	525	55.6	530	67.5	157	55.7	111	47.7
1989	85	43.3	945	68.5	307	63.8	n.a.	n.a.

Source: Cambridge Examinations Syndicate (1989).

6.36 A-level programs are not very effective. The small size of many A-level institutions (especially sixth forms in secondary schools) limit the range of programs that are offered. Their main mission is university preparation; yet only 34 percent of those entered for examinations meet the standard two A-level requirement. Many sixth form graduates who enter university with lower qualifications (five CXC passes, one A level) have to undertake preliminary programs that is a form of repetition. At UWI many sixth form graduates have inadequate literacy skills, which has necessitated the expansion of use of English programs in the first and second year of university study. A-level programs have no specific provision for preparing graduates for the workplace; they are strictly academic and contain no work "attachments." Given the small proportion who qualify for university, this may be an omission. Students who fail all their A-levels (38 percent of the total in 1986) tend to receive little or nothing in the way of accreditation or certification, and in salary terms are usually no better off than a secondary school graduate with CXC passes.

Table 6.18: CARIBBEAN - PROPORTION OF ORIGINAL AGE-COHORT GAINING TWO "A" LEVEL PASSES, 1990

Country/Region	Percentage of Age Cohort
Barbados	2.5
Belize	0.5
Guyana	0.5
Jamaica	0.8
OECS	1.5
Trinidad	4.2

Source: Appendix Table A-12.

6.37 Available quality indicators for full-time teacher education programs are not encouraging. For example, in 1987 there were only 28 graduates from the original intake of 70 at St. Vincent Technical College, and there is often significant repetition in individual subjects. For East Caribbean teachers' colleges, repetition to graduation ratios average 1.86, indicating that only about one-third of students pass the first time (see Appendix Table A-13).

6.38 A serious limitation on the effectiveness of primary teacher training is the poor academic background, both on entry and graduation, of the intake to teachers' colleges. Few trainees have a secondary qualification in mathematics or science. Broomes (1989) reports that in 1985/86, 80 percent of teachers in East Caribbean colleges left without a CXC O-level in mathematics and 38 percent without a pass in science. King (1989) reports that between 22.3 percent (Dominica) and 55.7 percent (St. Vincent) of the primary teaching force do not have four CXC passes (including English). Many of the teachers who fail teacher education programs do so because of poor performance in the academic examination papers.

6.39 Secondary teacher training provision is limited. Many teacher training institutions are small and do not have the range of physical facilities (laboratories, workshops, home economics centers) or specialist trainers required. Many of the pedagogy teachers are 'generalists' rather than primary or secondary specialists. As a result, many teachers' colleges cannot offer the range of secondary 'subject methods' programs required to effectively teach the management and organization of science laboratories and workshops, 'map work' or technical-vocational skills. The majority of qualified teachers in secondary schools have received general teacher training (with a primary education bias) and are posted to secondary schools on the basis of superior academic qualifications rather than specific secondary teacher training.

6.40 Graduation rates in both craft and technician programs are low. For example, in Trinidad in 1987 and 1988 pass rates for technicians were 33.1 percent and 31.1 percent, respectively. For craft programs, pass rates were only 19 percent and 17 percent in the same years. Barnett *et al.* (1988) report that overall pass rates in 1987 in St. Lucia and St. Vincent were approximately 60 percent. Generally, performance by females exceeds that of males. Craft examination results in Trinidad show that 41 percent and 37 percent of females passed, compared to 7 percent and 8 percent of males in 1987 and 1988, respectively. The same pattern applies to technician examinations. Not all public institutions keep records on the destination of their graduates. Where data are available, placement ratios for successful graduates are good. In 1987, 72 out of 77 Dominican graduates found employment. In Montserrat, almost all college leavers from technician and craft programs found employment, despite only 12 percent graduating successfully. In St. Vincent all electronics and secretarial studies graduates found employment (Barnett *et al.*, 1988). The overall picture suggests that since skilled vacancies outstrip supply, many graduates find jobs no matter what their quality.

6.41 Technician and craft programs are based in public training institutions that are often isolated from changing labor market needs. These public institutions often find it difficult to respond quickly because of rigid government planning and management policies and budgeting arrangements. A flexible response is made more difficult by the long-term nature of the programs (two years or more) and external examination requirements. By the time a student graduates, the specific skill acquired may be obsolete. Although technician and craft-course graduates usually find work, it is often unrelated to their specific training.

6.42 Government-run institutions also find it difficult to provide up-to-date equipment because of fiscal pressures. By the time graduates enter the workplace, the technology may have changed; the skills learned have become obsolete. Many of the existing technician and craft courses concentrate on skill-based learning rather than general technological principles, which precludes trainees being able to learn new skills quickly. In instances where Caribbean institutions have attempted to adopt a more technological approach (e.g., the CAST technology diploma programs), their effectiveness is undermined by the weak science and mathematics background of students at entry. Most students who have a CXC pass in science and mathematics (which are few) will take the A-level route. The work attachment component of these programs is small. A survey of OECS public institutions (Barnett, 1990) indicated that it can be as small as 2 to 6 weeks a year; some courses industrial attachments are nonexistent. Little training in management or entrepreneurship is provided. In the OECS institutions none of the programs makes such provision. These deficiencies are confirmed by Bourne (1989). He reports that field interviews with prominent persons in the business and industrial sector demonstrated that:

> One (deficiency) is the limited extent of cross-disciplinary education and the too narrow specialization which hampers employment flexibility and hinders insight into 'real life' and intellectual problems. Another is the relative absence of...'practical orientation' or work components in academic programs.

6.43 Quantitative data on the quality of nursing and allied health programs is limited and cannot necessarily be considered representative. St. Kitts-Nevis College of Nursing reports a decline in pass rates for registered nurse examinations from 100 percent (1979) to only 31 percent (1984). On the other hand, a CARICOM study in 1985 provided more positive indicators for a range of allied health programs. A sample of 40 supervisors rated graduates as average to good in terms of their effectiveness in the workplace, while graduates generally rated their programs highly. The continued emigration and acceptance of nurses into the North American system reported in many Caribbean countries is some indication of accept table quality. A common reported theme is the increasing difficulty of recruiting trainees with adequate background in English, mathematics, and science. Barnett (1988) reports that some nursing schools have to offer remediation to help nurses cope with the programs.

6.44 The majority of programs in technical institutes are between one and three years full-time and directed at general labor market needs. The skills training programs for unemployed youth are three to twelve months and target immediate labor market requirements, often in relation to government aid projects such as rural electrification, new manufacturing capacity and road rehabilitation. Quality indicators are encouraging. Three schemes in the Eastern Caribbean (Barbados, Dominica, St. Lucia) placed 59.1 percent of trainees in employment (including part-time and self-employment) over the period 1982-84 (USAID, 1985). Six schemes in the OECS trained 2,659 young people over four years and 2,186 were placed. A recent evaluation of the SERVOL (Trinidad) skills training scheme indicates that 50-60 percent of graduates are placed in jobs within one year of graduation, 5 percent establish microenterprises and 40-45 percent are unemployed. The latter figure drops to 20 percent within two years. The Youth Training Employment Partnership Program (YTEPP, Trinidad) estimates that of the annual intake of 8,000, 15 percent find employment in small enterprises, 30 percent in other forms of self-employment, 25 percent go on to further education and 30 percent find other forms of work experience. Further quantitative data on the effectiveness of pre-employment training in the Caribbean is limited. A survey in 1988 of the Barbados skills training programs indicated that a majority of employers judged that the scheme was preparing effective semi-skilled workers.

6.45 In general terms, youth training schemes appear to be responsive to the labor market. The short duration of courses and the absence of formal examinations facilitate a flexible response. Unlike most technician and craft programs, work experience, entrepreneurism and small business management constitute a significant part of youth skills programs. For example. SERVOL programs have roughly one-third the course time devoted to industrial experience; the YTEPP (Trinidad) scheme contains elements of vocational guidance, micro-entrepreneurism, business management, and post-training support. The latter has also effected a direct partnership with employers who pay trainees on attachment. Although YTEPP is still in its infancy, and long-term effectiveness cannot be judged yet, the program design appears to be an effective one. (See Box 4 below.) Another positive feature of these schemes is the emphasis placed on developing positive attitudes that students take to the workplace and home. SERVOL has a four-month Adolescent Development Program prior to skills training. Qualitative evidence suggests that it is effective, with over 85 percent of parents reporting an improvement in their offspring's attitude to parents and family (SERVOL, 1990).

6.46 The quality of adult education programs is difficult to measure. One indicator is the performance of private candidates in CXC examinations, compared to secondary school students. These extramural students receive less supervision and study time is often reduced by spasmodic attendance due to work pressures. Pass rates in mathematics and English are half those of secondary school students; however, in "principles of business" they are the same (Appendix Table A-14). Based on the fragmentary evidence available, the quality of private training is encouraging. One Barbados commercial school reports overall pass rates of 74 percent for an entry of 233 students, of which 83 percent are part-time evening students. The same college reported an 82 percent pass rate in advanced secretarial examinations, which is far above international norms for these courses. It would be unwise to generalize too much from these isolated examples of performance by part-time students in adult education centers and private institutions. They are notoriously mixed in quality. Nevertheless, they do indicate some scope for expansion of part-time study without adverse effects on quality.

6.47 Largely due to the close proximity of the training experience to the workplace, employee training, in general, tends to be cost effective. The data for Jamaica indicate that provision may be much larger than is often assumed. However, in the Caribbean, as in many developing countries, such training is restricted by the high proportion of small and micro-businesses. Such enterprises find it difficult to organize their own training and many are unwilling to invest in long-term programs because of the need to replace staff temporarily and fear losing them once trained. Despite these problems, there are examples of where incentives have been implemented to stimulate employer training and overcome potential constraints. The Small Enterprise Assistance Scheme (SEAP) in the OECS countries provides cheap loans (including subsidized training costs) to new microbusinesses. Training is managed by National Development Foundation training units personnel who arrange finance, recruit appropriate technical assistance, and provide follow-up support. Over a four and a half years period, SEAP has provided loans to 2,500 micro-businesses, trained 3,500 entrepreneurs, and provided 366 technical assistance consultancies (SEAP Newsletter, 1990). When companies can obtain assistance with the management of training, there is evidence of willingness to find the finance.

6.48 In 1990, the Dominica NDF branch managed the training of 250 business persons in nine months, realizing revenues of US$7,000. These revenues represented 30 percent cost recovery overall and approximately one-third of the training courses showed a profit (NDF, Dominica, 1990). The effectiveness of apprenticeship training will be affected by the size of a company and its range of operations and training capacity. The breadth of skill development is likely to be more restricted in small businesses. Effectiveness can be enhanced by supplementing on-the-job training with formal training in public institutions. This approach has been adopted in Barbados, where formal training is subcontracted to the local technical institute.

Box 5 - YOUTH TRAINING AND EMPLOYMENT PARTNERSHIP PROGRAM

In the 1980s, a severe economic recession exacted a heavy toll in Trinidad and Tobago. While the labor force grew by almost 43,000 between 1982 and 1989, the economy lost 23,000 jobs. Unemployment reached 23% in 1989, 40% of which were youth aged 15 to 24. Many of these youth had left school ill prepared for even the scant employment offered in the labor market. They had neither the education, motivation, nor work experience required by employers; nor were they equipped to generate income through self-employment.

The Government introduced a series of measures during the second half of the decade to promote economic recovery and growth. It also took steps to deal with the social consequences of the economic recession and unemployment, particularly youth unemployment. In 1987, it launched the Youth Training and Employment Partnership Program in order to help out-of-school and unemployed youth acquire the motivation, skills, and work experience to improve their employment prospects with the restoration of economic growth. The YTEPP program got off to a good start but was hampered by financial, technical, and management problems. In 1991, the Government secured a loan of US$20.7 million from the World Bank in order to improve the quality and effectivenss of the YTEPP and strengthen its management.

The YTEPP project design was unusual in two ways. First, designers anticipated an array of training and support needs of youth, and liased with different public and private organizations to do so. Second, they devised alternate pathways for trainees which would address their different capabilities and employment interests. Pathways were geared either towards wage employment or self-employment. After initial counseling, all alternatives required that the youth first take remunerative literacy classes if necessary, and then 260 hours of career enhancement classes, stressing social/attitudinal development and life skills essential to maintaining a job. These were followed by 14 different clusters of job skills training, each cluster lasting 224 hours, or 140 hours of self-employment training for those youth entering the program already knowing they wished to set up a business and with sufficient skill to do so. Job skills training was followed by a 640 hour public or private work experience apprenticeship, arranged through the Apprenticeship for Industrial Mobilization (AIM) program with the Government's National Training Board.

The trainee could also choose to enter self-employment training after the job skills module. This module attempted to develop entrepeneurial traits and business skills through practical business exercises, either with a trainee's business idea or a fledgling business. The last part of training was devoted to drawing up a business plan and going through a loan application process. The latter was facilitated by a Youth Enterprise Support System (YESS) launched by the Small Business Development Company (SBDC) concurrently with the project. YESS was established as a consortium of lending institutions including cooperative and commercial banks, training institutes such as YTEPP, and business persons wishing to serve as mentors. To facilitate loans to youth, the SBDC set up a youth loan guarantee program.

The project supports a number of activities including curriculum development and standardization, teacher training, institutional development of YTEPP, a labor market information system, and systematic evaluation to track YTEPP graduates and improve future training and support programs.

Monitoring Quality and Effectiveness

6.49 Monitoring the quality and effectiveness of tertiary education and skills training is complicated by the proliferation of institutions (national, regional, external) participating in the process. The main institutions involved are summarized in Appendix Table A-15. These institutions use different certification procedures and accredit and validate in different ways, which causes problems in standardizing program nomenclature, levels, and equivalencies. The difficulties are further compounded by insufficient separation between program design and delivery as opposed to quality control. Consequently, the roles of the various institutions involved have become blurred and at times confused.

6.50 Some of these difficulties could be overcome by modularization of programs using a competency-based approach that specifies and determines the levels of competency achieved by students. This approach is underutilized because many institutions (especially at the national level) lack the resources to undertake the task. A review of the OECS tertiary institutions (Barnett 1990) shows little evidence of the use of skill profiles when testing and measuring student achievement. Most continue to rely heavily on pass marks and overall grades. An unfortunate consequence of the absence of skill profiles is that it tends to result in the emphasis on knowledge at the expense of practical skills and attitudes. This, in turn, can devalue the importance of practical work and industrial attachments in curriculum design. National tertiary institutions could usefully draw on the experience of the CXC, some youth training programs, and regional institutions such as CAST, which have considerable expertise in this area. A particularly helpful model that could be adopted is the school-based assessment (SBA) developed by CXC for the continuous assessment of practical subjects.

6.51 The limited use of competency-based testing and measurement acts against standardization of program levels and equivalencies. This reduces opportunities for transfer between programs and increases the likelihood of repetition. At the national level, priority areas for standardization are secondary school leaving certificates with CXC examinations, A level with associate degree programs, and youth skills training and apprenticeships with craft programs. Countries grappling with these issues could usefully draw on the experience of community colleges in Barbados and Belize, which have gone some way to resolving the A-level/associate degree equivalency.

6.52 Many national governments possess only a limited capacity to undertake rationalization of the processes required at the tertiary level. The main expertise in ministry of education testing and measurement units is concentrated in primary and secondary examination work. National training boards, especially in the smaller countries, where they are usually part-time operations, often lack manpower resources and suffer from rapid turnover of representatives. Employers, especially those running small businesses, find it difficult to devote staff resources to these exercises. Although governments have made significant progress in strengthening their national training agencies, management and coordination of the effectiveness of tertiary education and skills training remains inefficient (CARICOM, 1990). Some progress has been made at the regional level, underpinned by CXC's work in secondary schools. An Association of Tertiary Level Institutions (ATLI) was established in 1990, under the stewardship of UWI, with some responsibility for standardizing tertiary qualifications. CARICOM has appointed a Regional Advisory Committee to implement regional tertiary certification reforms as one of its functions. However, both bodies are only part-time and suffer from lack of resources.

6.53 The absence of clear proficiency specification and regionally standardized certification has complicated the system of accreditation, validation, and articulation of programs and created inefficiencies. At both national and regional levels, individual institutions negotiate independently, often on a program-by-program or individual student basis. This results in both duplication of effort and wastage of resources. Inefficiencies in the system can prove very costly in terms of course repetition. For example, spending an additional year in a regional institution because of poor articulation can cost between US$6,000 to US$20,000, depending on the institution and course. At the national level, this additional year in a tertiary institution can cost between US$700 to US$3,000, depending on the country.

C. Resources and Their Use

6.54 This section begins with an examination of existing Caribbean labor market information systems and continues with an analysis of the scale, sources and quality of present resource allocation to tertiary education and skills training, including finance, staffing, and physical plant and equipment.

Labor Market Information Systems (LMIS)

6.55 An effective LMIS would provide up-to-date information on the demographic and socioeconomic characteristics of the labor force, the composition and nature of employment and unemployment and, most crucially, incipient changes in labor demand and training requirements. In many Caribbean countries systems for this kind of data identification, collection, and analysis are weak and there is heavy reliance on external agencies to carry out these functions (Fergus, 1989a,b,c). A common feature is insufficient dialogue with private sector employers, with the result that many of the training needs analyses are based on manpower forecasts derived solely from demographic trends and public employment policy. In most Caribbean economies it is the private sector that is growing, and responsiveness to their requirements needs to be a priority. In the smaller economies, a new factory or hotel can change the labor market profile overnight. Greater use of studies of graduate employment, wages by skill level, institutional capacity usage, the ratio of admissions to applications, and tracer studies would improve forecasting. The development of this kind of information is still very limited.

6.56 Caribbean governments are taking steps to improve their LMIS, and CARICOM has instituted a training program for statistical officers. Data collection in ministries of education in the OECS countries is being strengthened through technical assistance and training. Revitalized national training boards in the OECS countries have been mandated to upgrade labor market data collection. In general, however, LMIS development still appears to remain a low priority for many governments and education planning officers are often expected to do this work part-time, in addition to numerous other duties. Strachan (1990) reports that LMIS improvements in the OECS could be undermined by a lack of personnel. Similarly, the sustainability of national training boards could be jeopardized by the heavy reliance on part-time assistance and goodwill of individuals, as well as the turnover of membership.

Public Resources for Tertiary Education and Skills Training

6.57 The past two decades has seen an eighteenfold increase in the public financing of tertiary education in English-speaking Caribbean countries. However, as illustrated in Table 6.19, tertiary education's share of the education budget has actually declined in several countries over this period. For the 10 countries shown, the average share in 1987 was 11.3 percent compared to 23.5 percent for Latin America and a developed country average of 19.1 percent (World Bank, 1986). This is consistent with the low enrollment ratios for tertiary education in the Caribbean.

Table 6.19: CARIBBEAN - TERTIARY SHARE OF TOTAL RECURRENT EDUCATION EXPENDITURE SELECTED COUNTRIES, 1970 and 1987 (in percent)

Country	1970	1987	Change
Antigua	6.0	13.3	7.3
Belize	12.0	7.3	-4.7
Dominica	9.0 (1973)	8.0	-1.0
Grenada	11.0 (1973)	8.1	-2.9
Guyana	7.0	6.5	-0.5
Jamaica	8.0	23.3	15.3
St. Kitts	10.0 (1973)	10.8	0.8
St. Lucia	11.0 (1972)	8.4	-2.6
St. Vincent	9.0 (1972)	6.1	-2.9
Trinidad	5.0	21.2	16.2

Source: Knoop (1976); OECS/EEC (1988); Commonwealth Secretariat (1990b).

6.58 Turning to unit costs, these were shown in chapter II to be four times as high as in primary schools and 2.5 times as high as in secondary schools. As Table 6.20 illustrates, there is significant variation within countries by institutional type. Generally, teachers' colleges have substantially higher unit costs than technical institutions and community colleges, although there are country variations.

Table 6.20: CARIBBEAN - UNIT COSTS BY TERTIARY INSTITUTIONAL TYPE, 1987 a/ (US$)

Type	Barbados	Trinidad
Community College	1,819	--
Technical Institute	700	1,866
Teachers' College	5,581	13,355
Sixth form b/	1,569	3,402

a/ Based on public expenditure only.
b/ Based on twice the unit costs for secondary education.

Source: Government estimates.

6.59 Data on the costs of skills training programs are limited. USAID (1987) reporting on government-run schemes estimated unit costs of US$679, US$1,005 and US$878 (including management and administration costs) for Barbados, Dominica, and St. Lucia, respectively. Allowing for cost escalations and the short duration of these programs (often 3-6 months), these costs are high compared to full-time primary, secondary, and tertiary technical education, as Table 6.21 shows. Accurate cost data for non-government skills training schemes are difficult to access. An indicative cost for the full-time SERVOL program (excluding capital grants) is roughly US$1,100 a year, which is only 60 percent of the cost of one program in the local technical institute. A review of business skills programs run by a private organization in Dominica, suggest full-time equivalent costs of US$1,000 to US$1,200 a year (NDF, Dominica, 1990), which is roughly the same as full-time costs at the local technical college. The unit cost for a private commercial school in Barbados is estimated at US$650 a year.

Table 6.21: CARIBBEAN - UNIT COSTS OF SKILLS TRAINING (US$)

Country	Skills Training (1985)	Primary (1987)	Secondary (1987)	Tertiary/Tech.a/ (1987)
Barbados	678	711	784	700
Dominica	1,005	258	492	1,000
St. Lucia	878	160	433	1,015

a/ Includes part-time enrollments.

Source: USAID (1987); CDB (1990).

Private Financing of Tertiary Education and Skills Training

6.60 Most of the tertiary institutions are publicly owned and run. Where tuition charges are made, they tend to be in parastatal institutions. Generally, in comparison to other developing Regions, user fees represent a small proportion of unit costs, especially in the larger countries. No fees are charged in Guyana, Trinidad, or Barbados. Data on fees, however, underestimate the level of private finance for tertiary education. In most countries students have to buy books, pay examination fees, and incur transportation costs. Table 6.22 provides some indicative figures of total private contributions to total cost.

6.61 In the part-time, extramural classes held by public institutions, especially in the fields of commercial skill development, business management, computer technology, and upgrading of secondary school qualifications, full cost fees tend to be charged. Few of the institutions receive government subsidies and students have to meet full costs. For example, one commercial school in Barbados charges up to US$ 2,500 a year for some of their courses. This school has an annual enrollment of 800-900, mainly part-time students paying on average about US$150 a year, with annual revenues exceeding US$140,000. Even in low-income countries like Guyana, the private sector is expanding. It is estimated that a student can be faced with charges of up to US$200 a year (40 percent of GNP per capita); yet it is reported that in some fields demand exceeds supply. Employers and private individuals appear willing to pay for programs that will improve their business. For example, BIMAP (Barbados) received almost US$250,000 in 1986 and 1987 from private sources for its training. Even in smaller countries, businesses appear willing to pay for staff training. For example, the Dominica NDF generated US$7,000 from private companies in 1990.

Table 6.22: CARIBBEAN - PRIVATE COSTSa/ AS A PROPORTION OF TOTAL COSTS, 1990
(in percent)

Country	Academic	Technical	Teacher Education b/	Adult Education c/
Barbados	15-20	15-20	0-5	CR
Belize	45-50	30-35	10-15	CR
Guyana	10-15	5-10	5-10	CR
Jamaica	25-30	15-20	0-5	CR
OECS	15-20	15-20	0-5	CR
Trinidad	15-20	5-10	5-10	CR

a/ Private costs do not take account of government grants to students.
b/ If teacher substitute costs are included, this figure will fall significantly.
c/ Most adult education classes are geared to maximize cost-recovery (CR); no unit cost figures available.

Source: Appendix Table A-4.

6.62 In-plant training also consumes large amounts of resources. The recent survey of this form of training in Jamaica (Caribbean Business Management 1990) suggests that direct expenditures are equal to around 27 percent of the Government's total expenditure on tertiary education.

6.63 Another source of direct private financing is employers' contributions to trainee wages during pre-employment skills training and apprenticeships. In Barbados, employers pay apprentices between 45 and 75 percent of a full wage over the three-year program. In Trinidad, employers pay YTEPP trainees between US$50 and US$100 per month when on industrial attachment. There are several forms of indirect private financing of tertiary education and skills training. Industrial attachments, where private firms supply facilities and trainers, is a common example. In some cases, private individuals supply free labor and materials. Several institutions (e.g., Barbados Polytechnic) receive industrial equipment and obtain guest speakers from private firms. Private financing of overseas training is also very significant. Recent data are not available, but as described earlier, 11,444 Caribbean students were enrolled in 1983 in North American universities or similar training institutions, some of which provide the equivalent to Caribbean tertiary training. This training is estimated to have cost US$125 million.

Resource Use and Determinants of Unit Costs

6.64 The high unit cost of tertiary education and skills training relative to primary and secondary education has been described. There appears to be considerable scope for economies of scale when the determinants of unit costs are examined. The overall determinant--patterns of organization--will be discussed first followed by its effect on staff/student ratios, nonacademic expenditures, utilization rates, curriculum organization, and physical facilities.

6.65 The existing institutional pattern of tertiary education provision in many Caribbean countries is a product of history. As new education/training needs have emerged in the past 20 years, the tendency has been to create a new institution, under separate management, rather than incorporate new functions into existing institutions. When reorganizations have been proposed, they often meet with resistance from older institutions who guard their autonomy jealously, often supported by influential alumni. The outcome of this process is a proliferation of small teaching units that may duplicate and overlap each other's functions. Table A-1 provides details of this. The generally low levels of enrollment can be partly explained by the effect of low populations and the need to decentralize provision in some of the larger countries. However, there is considerable scope for rationalizing the present organization into larger units, taking into account demographic and geographical constraints.

6.66 The small size of many institutions limits their capacity to offer a wide range of cross-curricular programs of the kind required to produce paraprofessionals, that are in short supply. Sixth forms are restricted to a narrow academic curriculum. Small teachers' colleges often lack the capacity to provide specialist secondary teacher training and technical teacher training. The small size of many nursing schools and agricultural colleges makes it difficult for them to provide the range of specialist technical programs required by the economy. This pattern of small autonomous institutions also produces significant duplication of specialist facilities, such as science laboratories, workshops, and business education facilities, and staff. The present patterns tend to create a labyrinth of admissions procedures and certification, which makes standardization and articulation between programs more difficult. In general, the tertiary education and skills training system would benefit from the development of larger units through various forms of consolidation. The range of programs would be enhanced and the development of cross-curricular programs facilitated. These larger institutions would be capable of offering programs at different levels, and make standard setting and program progression easier.

6.67 Staff/Student Ratios. A survey of tertiary institutions in 10 English-speaking Caribbean countries for which overall staff/student ratios are available indicates a median of 1:11 (see Table 6.23). Comparisons with ratios in other countries are difficult to make, since the tertiary sector represents a halfway house between secondary and university education. However, ratios are lower than higher education ratios of 1:12 and 1:15 in the United Kingdom and the United States, respectively, and 1:13.8 at UWI. In some Caribbean countries, tertiary ratios are only one-half to one-third of staff/student ratios in secondary schools. For example the secondary school median in St. Vincent is 1:17 compared to 1:6.5 in tertiary institutions (CDB, 1990b). Ratios in teachers' colleges are significantly below overall averages in all but one of the countries where data are available. The median is 1:8.7. Overall, there appears to be considerable scope for reducing unit costs by reducing staffing levels or increasing enrollment. Only fragmentary information is available for staff/student ratios in private and NGO training institutions. SERVOL has ratios of roughly 1:7 in its skills centers. One commercial college in Barbados has a ratio of 1:16 (based on full-time equivalents). A non-governmental training organization in the OECS reports figures of 1:16 for management courses. Generally, staff/student ratios are higher in part-time programs. For example in secondary school skill-upgrading classes for adults, staff/student ratios of between 1:20-30 are not uncommon.

Table 6.23: CARIBBEAN - STUDENT/STAFF RATIOS IN TERTIARY INSTITUTIONS BY COUNTRY AND SUBJECT

Country	Year	Overall	Individual Institution
Antigua	1986	10.4	
The Bahamas	-	-	
Barbados	1989	-	Education 3.3, Engineering 11.0
Belize	1990	10.7	
Dominica	1987	13.0	Education 15.0
Grenada	1989	11.7	Education 8.9, Engineering 10.0, Nursing 27.0
Guyana	1985	11.7	Education 5.3, Engineering 14.0
Jamaica	1989	12.5	
Montserrat	1989	9.2	Engineering 9.6
St. Kitts-Nevis	1989	8.7	Education 5.7, Engineering 9.7
St. Lucia	1987	7.9	Education 7.0, Engineering 6.0
St. Vincent	1989	9.1	Education 7.5, Engineering 5.0
Suriname	1990	8.7	Education 8.1
Trinidad	1990	-	Education 14.0, Engineering 10.0

Note: In some countries, these figures include enrollments of part-time staff and student enrollments.

Source: OECS/DHV (1988); CDB (1990b), World Bank (1989a); Commonwealth Secretariat (1990b), Suriname Ministry of Education

6.68 Non-academic Expenditures. There is considerable evidence that the availability of books, equipment, and other educational resources can dramatically improve the quality of education. Of total tertiary education budgets, Table 6.24 indicates that a median figure of 15 percent is allocated to expenditures other than personal emoluments. Bearing in mind that these figures include transportation, public utilities, and other non-academic expenditures, the amount spent on books and equipment is significantly less. One cause of high salary shares is the high administrative expenditures in some tertiary institutions. For instance, in 1986 three tertiary institutions in the OECS were spending between 40-55 percent of unit costs per student on administration. Unless these administrative and other non-academic expenditures are held in check, the potential for improving quality will be adversely affected.

6.69 Utilization of Resources. Part of the high unit costs can be attributed to the large number of programs some tertiary institutions offer. For example, St. Kitts-Nevis Technical College offers 12 programs for an enrollment of 159 with a median teaching group size of 11 students (Barnett, 1988). In the Division of Technical Education and Management Studies, Sir Arthur Lewis Community College, St. Lucia, only 3 of the 13 programs enrolled more than 15 students in 1987 (Barnett, 1990). Not infrequently, intakes to individual technical programs are only 3 or 4 students in some OECS institutions (CDB, 1990b). Small sixth forms also result in small teaching groups and under-utilization of resources. Based on examination entries, it appears that 15 Trinidadian sixth forms have intakes of 50 or less. The complexity of the sixth-form curriculum creates several teaching groups of 10 or less. In some of the smaller territories, teaching groups of 1-5 students are common.

Table 6.24: CARIBBEAN - RECURRENT BUDGET DISTRIBUTIONS TERTIARY INSTITUTIONS
(in percent)

Country	Year	Wages	Services
Antigua	1986	60	40
The Bahamas	1986	75	25
Belize	1988	75	25
Dominica	1987	87	13
Grenada	1987	91	9
Jamaica	1983	85	15
Montserrat	1987	85	15
St. Kitts-Nevis	1987	91	9
St. Lucia	1987	90	10
St. Vincent	1987	80	20

Source: OECS/EEC (1988); UNESCO surveys (1982, 1985).

6.70 CDB surveys (1990b) of OECS tertiary institutions point to under-utilization of facilities and staff. It is reported that for many full-time courses, only a 5½ hour day applies. For example, in Dominica it was estimated that only 25 percent of afternoon periods are used for instruction or workshop activity. In Grenada, the average training day at the Grenada National College Technical Division is only 4½ hours; nor are there substantial part-time or evening programs to use the spare capacity. In St. Vincent it is estimated that only 50 percent of the technical college's workshop capacity is being utilized. The CDB reports point to recurring evidence that many teachers are working less than the prescribed 20 hours per week in several OECS tertiary institutions. There is clearly significant scope for making better use of tertiary facilities and staff in these countries. Improved utilization can be achieved by increasing full-time enrollments and extending the colleges' day to expand part-time and evening class provision. A good example of high-capacity utilization is the College of Arts, Science and Technology in Jamaica. Only 34 percent of its 6,221 students are full time. The remainder are part-time, evening, and modular in-service students.

6.71 Fragmentary evidence suggests that resource utilization in private and parastatal training institutions is higher. Commercial schools and management institutes have long operational days (usually 10-12 hours) and a high proportion of their students are in part-time classes. One commercial college in Barbados operates with 83 percent of its enrollment in evening classes. The training capacity of private employers is underutilized. Much of the new technology entering an economy comes through the private sector. Public institutions often cannot afford to replicate the modern office or factory, which results in inappropriate training. Conversely, on-the-job training may not be sufficient. In such instances companies can supplement it by custom-built training packages or day-release courses in public institutions. There is a great deal of scope for expansion of these approaches.

6.72 Curriculum Organization. Greater use of modular curricula could enhance resource utilization. Appropriate modules could be used by private employers for training on the job and would facilitate home study. Modular programming could also increase the efficiency of public institutions by allowing trainees to join and leave training as required. This would make intermittent study alongside work commitments easier and would facilitate evening courses. CAST has moved in this direction: presently over 25 percent of its enrollment is in modular in-service training. Commercial and management schools in the Caribbean are beginning to use modular programs effectively. There is significant scope for more modular programming in the public institutions.

6.73 Resource use could be improved if course offerings were consolidated and classes were combined for different programs for common components, including English, mathematics, science, and technical drawing. In several tertiary institutions these components, roughly at the same level, are often taught in separate classes. This consolidation could operate within institutions and between them. A case study in St. Lucia in 1987 for mathematics only indicated that the present class size was 11.5 in the first year and 9.2 in the second. Increasing these figures to 15 could reduce the number of classes by 20 percent; increasing class size to 20 could reduce the number of classes by 58 percent (CDB, 1990b). The potential economies are enormous.

6.74 Physical Plant and Equipment. Various reports by regional organizations and donors have pointed to the poor quality of much of the physical plant and equipment in many of the Caribbean countries. The comments below are typical:

> Community College, Dominica:
> "Sixth form students are based in a converted set of huts going back 20-30 years ... thin partitions between rooms make effective teaching impossible ... the college has no science laboratories for its own use ... the vote for equipment and supplies is inadequate." (British Government Advisers Report, 1985).
>
> Technical Institute, Guyana:
> "All the machinery is more than ten years old and apparently no action has been taken for amortisation, replacement or for maintenance ... basic equipment for welding and electronics is very poor." (UNESCO, 1985).
>
> National College, Grenada:
> "Hand tools, gauges, electronic equipment are in an inadequate supply ... very little equipment is provided for plumbing ... no equipment for refrigeration ... the storeroom is cluttered with unserviceable or obsolete equipment." (UNESCO, 1982).

6.75 In many Caribbean countries, facilities for advanced science programs to serve A-level, secondary teacher training and technology programs are inadequate. An OECS survey in 1985 indicated that in 10 of 12 non-campus countries, advanced science programs were not viable because of shortages of adequate plant, equipment, and ancillary services. The present fiscal pressures make it difficult for public institutions to provide up-to-date equipment consistent with the requirements of the modern workplace. The recent CARICOM survey of technical-vocational education acknowledged this situation and proposed a possible solution based on links with business and industry.

6.76 Quality of Teaching Staff. A survey of the quality of the A-level teaching force in seven Caribbean countries provides a mixed picture. Just over half of the sample were university graduates, of whom at least a quarter had received no pedagogical training. Most of the non-graduates were trained teachers. Jamaica and Trinidad were heavily reliant on non-graduates constituting 56 percent and 36 percent, respectively, of the teaching force in A-level institutions (CXC, 1988). For this level of teaching, a strong academic background is a significant factor in effectiveness.

6.77 Staff in teachers' colleges appear well-qualified in academic and pedagogical terms. A survey of East Caribbean colleges conducted by UWI in 1989 indicated that over 90 percent were university graduates and all had received some form of pedagogical training. However, the high rate of referrals of teacher trainees suggests scope for improved effectiveness. As a generalization, it is reported that many college tutors lack recent (within five years) teaching experience. Their effectiveness might be improved by arrangements for intermittent return to the classroom.

6.78 Various reports have pointed to the need to improve the technical and pedagogical competence of technical-vocational teachers and ensure adequate industrial experience prior to and during teaching service. The past decade has seen the introduction and/or expansion of full-time and part-time programs in Trinidad, Jamaica, Barbados and the OECS, for example. However, quality improvements are difficult to sustain because technical teachers are attracted to the private sector by higher wages. One weakness of existing technical-vocational teacher training is its concentration on teachers functioning in formal institution-based courses. Training courses provide insufficient exposure for operating effectively in other training/teaching modes, including institution-employer partnerships, modular programs, apprenticeship schemes, competency-based programs, or distance-learning approaches. Another deficiency is the diversity of certificates and diplomas across the region. Some standardization is required to provide consistency and definition of what these various qualifications represent in terms of technical skill and teaching competence.

6.79 Given the range and complexity of tertiary level and skills training programs, it is difficult to quantify and specify staff development requirements exactly. The various reports and observations provide some useful indicators. Requirements fall into four main categories; improving technical/academic competence, refreshing industrial or workplace experience, pedagogical training and management/leadership training. In the past, much of the staff development for this level has been done full-time overseas. This has several limitations. First, it is much more expensive than local training (estimates suggest up to ten times as much) and therefore reduces the numbers trained. Second, because of government-donor training finance policy, it limits the opportunities for staff in NGOs and private institutions to acquire training.

6.80 Shifting the emphasis to part-time, in-country training would increase access and facilitate use of public and private sector resources. Institutions need to increase utilization of modular and part-time credit programs; workplace attachments for teacher trainers and vocational teachers could be organized in cooperation with government ministries and private employers. Distance learning programs (correspondence courses, UWIDITE) could be utilized more effectively. Management training could be bought in from local management training institutes for potential senior managers. Regional institutions (CAST, UWI) could provide part-time instruction if a particular specialty is not locally available.

6.81 Any move towards in-country staff development will need to be underpinned by a clearer pattern of program certification, validation, and articulation, linked to professional and financial incentives for staff. This would require partnerships between local and regional institutions to validate different program components. For example, in the training of vocational teachers, technical competence and pedagogical competence could be assessed by national training boards/CAST and ministries of education/UWI respectively. A ladder of opportunity could be developed through an 'induction' certificate or bachelor's degree model as proposed by the recent study for the Eastern Caribbean (UWI, 1990). Although proposed specifically for technical teachers, this could have universal applicability.

Institutional Autonomy and Resource Management

6.82 Some public tertiary institutions (e.g., in Barbados, Jamaica, and St. Lucia) have been granted a large degree of autonomy and independent boards of management. Broad-based private and public sector representation has improved information flow from employers to inform curriculum planning, staffing levels, and management structures. Boards are required to provide annual budget projections for approval by government with any additional programs being funded from additional training revenues. Within overall budgets, institutional heads have the flexibility to reallocate budgets, adjust programs, and plan for staff development. In general terms, this delegation of responsibility has been successful. Autonomous institutions such as CAST and the Barbados Community College have significant levels of part-time enrollment, many revenue earning programs and advanced management and vocational guidance systems. In contrast, institutions under more direct ministry control show fewer of these positive features. In many, the principal is still directly answerable to senior government officials. This can produce significant inefficiencies in terms of resource utilization. The CDB (1990b) survey of several such institutions in the OECS reveals that budgeting procedures largely reflect the previous years' situation while staffing levels and management structures are often based on traditional rather than projected need. Limited flexibility exists for financial allocations outside standard government categories, and there is little incentive to raise additional revenues, since these often revert to general government funds. The overall result of this situation is that institution heads can spend inordinate amounts of time dealing with ministries on relatively insignificant financial and staffing issues. However, any increase in institutional autonomy would need to be complemented by appropriate monitoring and inspection systems, including feedback on institutional performance from public and private sector employers.

D. Selected Areas For Action

6.83 To be effective, the tertiary education and skills training system has to be responsive to the demands of the economy. The previous analysis indicates than in many Caribbean countries it is insufficiently so. In broad terms, several barriers to effective response can be identified. Labor market information systems are underdeveloped and do not provide an adequate basis for policy formulation and implementation. Dialogue between public institutions and employers is limited and undermines responsiveness to labor market demands. At the same time, the capacity of private institutions, NGOs and employers to provide training has not been sufficiently assessed nor utilized adequately. The outcome is a mismatch between supply and demand, especially for technicians, middle managers, and paraprofessionals, who are in short supply. Responsiveness is also affected by limitations in access to tertiary education and skill upgrading resulting partly from the low quality of graduates from secondary schools, especially in English, mathematics, and science. Unit costs for training are high and present fiscal pressures put financial limits on the expansion of conventional, full-time, institution-based programs. Simultaneously, part-time extramural training for secondary school qualification upgrading and tertiary programs is underdeveloped.

6.84 The quality and effectiveness of education and training at these levels is spotty. Quality control and monitoring mechanisms by public and private sector employers need improving. Potential quality improvements are limited by the variable quality of staff, lack of opportunities for appropriate staff development, and inadequate expenditures on instructional materials and maintenance. The limited supply of top-quality technical-vocational teachers restrict attempts to expand provision and improve quality. The absence of well-defined standards and equivalences between programs makes quality monitoring difficult. It also interferes with efficient articulation between programs at national, subregional and regional levels.

6.85 There is some evidence of inefficient utilization of resources in public tertiary institutions. Possible economies are restricted by the proliferation of institutions, limited institutional management capacity and the degree of institutional autonomy. These factors limit potential opportunities for flexible subcontracting of training between public, non-government and private training institutions to maximize use of national resources. The present system relies heavily on public financing of training. Present government financing policy favors those following full-time, public institution-based programs. Students preferring part-time study are relatively disadvantaged. In the higher-income countries especially there may be scope for diversifying finance.

6.86 This broad picture cannot capture varying situations across the region. The following sections provide some elaboration and propose some options for selective action. These actions are discussed under the headings: improving responsiveness, increasing access and equity, improving and assuring quality and effectiveness, improving resource utilization, and diversifying finance.

Improving Responsiveness

6.87 Responsive training policy requires accurate and up-to-date labor market information and socioeconomic trend analysis. In most if not all English- speaking countries the labor market information systems require strengthening. Some countries have the required functions spread across a range of ministries. To be effective, capacity should be centralized in a single government ministry or agency, with adequate resources. Governments need to utilize a wider range of labor market analysis techniques, particularly regular vacancy studies, wage rate analysis, and tracer studies.

6.88 The responsiveness of training policy is undermined by the fragmentation of responsibilities across government ministries and other agencies. In many countries, employers are also underrepresented at the policy formulation level. Governments should establish broad-based forums for tertiary education and training policy formulation. The management and implementation of policy also suffers from a degree of fragmentation. Government ministries and public institutions predominate in the process. The potential capacity of non-government organizations, employers, and private institutions is neglected. Implementing agencies need to be brought together under a single national training agency or board. Existing ones in the Caribbean have only limited resources and responsibilities.

6.89 The establishment of effective training agencies is a priority. Experience elsewhere has shown that to be effective, key elements are broad-based governance covering employers, trade unions and government; adequate and suitable financing; the ability and mandate to use resources flexibly; and a high level of professional capability. Responsiveness of agencies to the economy will demand a degree of autonomy from government ministries and access to training funds. More government support for non-government organizations (e.g., National Development Foundations) could provide a more flexible response to the training needs of the informal sector.

6.90 Public institutions would benefit from a higher degree of autonomy to be able to adjust programs and financing quickly in response to changing demands. Employer representation on boards of management would improve links with the economy. Reduced government regulation on retaining extra revenues from private sector training would encourage public institutions to respond to the training market. The College of Arts, Science and Technology, Jamaica and some government-run youth skills training schemes have worked well with this approach.

6.91 Curriculum reform is an area that requires urgent action. Education and training institutions might move towards a modular, competence-based approach rather than a syllabus-based, examination-oriented one. The benefits of the former are that it facilitates part-time study, allows for a wider variety of delivery systems and increases opportunities for consolidation of teaching groups. Examples of the suggested approach are BIMAP management programs, many business education courses (e.g., CXC syllabuses), some of the Trinidad Training Board skills training courses, and the prevocational teacher training program in Montserrat.

Increasing Access and Equity

6.92 This chapter earlier pointed to the low levels of access to tertiary education and skills training across the Caribbean by developing country norms. Since this part of the system is heavily dependent on the quality of primary and secondary education to provide suitable entrants, it would not be efficient to invest additional public resources into this subsector at a cost to the earlier parts of the system. Nevertheless, selective expansion is vital if the higher level skill demands of the economies are to be met. However, it is unlikely in the current economic situation that public institutions will be able to expand significantly using present modes of delivery. The ways to satisfy tertiary and skills training requirements are attaining substantial reductions in the unit costs of public institutions, greater encouragement of the private sector including in-plant training, and a greater element of cost-sharing.

6.93 Compared to primary and secondary levels, there is significantly greater scope for reducing unit costs in tertiary education. Possible measures to increase student/teacher ratios include larger classes (especially through consolidation of common course components), heavier teaching loads (through expansion of evening class work and extension of the college calendar), and the appointment of multipurpose teachers rather than single-subject specialists. There is enormous scope in many tertiary institutions for the expansion of evening classes and other forms of part-time enrollment. This could have two purposes. First, to provide part-time "foundation programs" for students who wish to pursue more advanced tertiary courses but lack the entry qualifications; and second, to run more advanced part-time and evening classes for people who cannot attend on a full-time basis. Useful model for these approaches are the Adult and Continuing Education Division, Grenada National College, where part-time enrollments are almost double full-time, and the business studies programs in St. Lucia.

6.94 To meet the backlog of untrained teachers (especially in the smaller territories), governments may consider experimenting with more flexible models of teacher-training. Full-time, institution-based programs are costly, which limits access. Models which emphasize on-the-job training combined with regular supervision, self-study packs, and vacation courses will be cheaper and more accessible. In the past, this kind of model has foundered on difficulties over adequate resources and certification. As a priority governments, in partnerships with accrediting agencies, should take steps to resolve these difficulties and implement this type of approach. The secondary teacher training model being formulated by UWI and the OECS is a possible response to accessibility and effectiveness. Governments will also need to consider measures for increasing access to technical-vocational teacher training, particularly in the smaller OECS countries and Belize. The subregional centers of excellence approach in Antigua and St. Lucia is a useful initiative though, of course, involves overseas study for non-nationals, which raises overall costs. Governments will need to develop local capacity, preferably on a part-time in-service basis to minimize cost and increase access. The larger countries have adopted this approach and it provides a useful model.

6.95 In general, there is considerable scope for expanding distance education, especially in rural areas where immediate access is limited by non-availability of programs and transport costs. To be effective, some degree of institutionalization is suggested based on a tertiary institution or a ministry adult education unit. Small groups of teachers can produce learning materials, supplemented by books and radio broadcasts. Extramural classes can be organized in local schools and community centers. This approach will be particularly applicable for areas such as business, management, and related courses that do not require specialized plant and equipment. It could also be used to supplement the training of small business entrepreneurs in the rural and urban informal economy.

6.96 Under present fiscal pressures, there are limits to the expansion of tertiary programs in public institutions. Governments need to consider measures for increased use of the capacity of employers, non-government organizations and private training institutions, with assistance in the form of limited subsidies and managerial and professional support. Public sector training (e.g., typing courses, managerial training) could also be subcontracted to private organizations using competitive tendering. More generally, there is a need to take a comprehensive view of private provision and consider the policy environment within which it operates. Suggestions have been made in Jamaica, for instance, to allow concessionaire tax rates to be applied to training operations in line with those in other activities that the Government is encouraging, and to rescind minimum wage legislation for trainees. The proposed national training agencies could be responsible for monitoring institutional standards and managing some programs.

Equity Considerations

6.97 The existing location of facilities and the admission and financing policies benefit those enrolled in full-time programs, based in public institutions, which lead to wage employment rather than self-employment. Generally, private costs are higher for those enrolled part-time in non-government and private institutions. The result is inequalities in access for students from low socio-economic groups, especially those in rural areas. Women, who are overrepresented in part-time classes, are disadvantaged by existing financing policy and are underrepresented in technical skills courses. The parameters are complex and overlapping, but several key policy interventions can be identified that could contribute to decreasing inequality. These include:

(a) targeted training programs for self-employment of the rural poor, especially women;

(b) providing incentives for part-time enrollment (e.g., subsidized fees, books, etc.);

(c) income contingent grants and subsidies, combined with more flexible admission policies for students from rural areas attending full-time programs;

(d) subsidies and grants to private training institutions to offset costs for full-time and part-time training;

(e) incentives for women to enroll in technical programs; and

(f) subsidies and grants for small businesses, particularly in rural areas, to encourage release of potential trainees.

6.98 These interventions would need to be carefully targeted. Potential costs could be offset by cost-sharing policies.

Improving and Assuring Quality and Effectiveness

6.99 Much of the existing provision at this level is pre-employment education and training. Caribbean labor markets are volatile, which makes the match between training provision and skill demand problematic. In general, governments need to give serious consideration to policies that place more emphasis on in-service education and training through the expansion of employer training and apprenticeship schemes. Governments can provide technical assistance and other forms of support through use of staff in public institutions or national training agencies.

6.100 Government policy regarding the continuation of pre-employment youth skills training schemes will need to take careful account of changing labor market patterns to ensure quality and effectiveness. While quality indicators for some on-going schemes in job placement have been encouraging, the economic uncertainties will necessitate continual review of scale and direction. In terms of effectiveness, policymakers will need to place added emphasis on the preparation for self-employment and small-scale entrepreneurial activity. Use of specialist expertise in local NGOs could improve overall efficiency.

6.101 Steps may be taken to improve the quality and effectiveness of many tertiary institutions to reduce wastage and increase graduation rates. Essential measures include reallocation of budgets to increase spending on maintenance, equipment, and staff development through economies elsewhere. The effectiveness of staff, especially in teachers' colleges and technical institutes, might be enhanced by their intermittent return to the classroom and industry, respectively.

6.102 Serious consideration could also be given to providing more programs flexibility. There is often a strong emphasis on single-skill or subject development that limits graduates' flexibility in the labor market. A level (or associate degree) programs would benefit from increased cross-curricular work as a preparation for work as well as for higher education and technical programs from an increased emphasis on principles of "technology" as opposed to training in specific occupational skills. An increase of basic management training and entrepreneurial elements in many courses could also contribute to graduates' marketability.

6.103 Consideration should be given to policies and strategies to strengthen the monitoring of quality and the effectiveness of certification and equivalences between programs. This could be done by a well-resourced national training authority set up to reduce the fragmentation of management responsibilities for the various public, private and non-government training institutions. Difficulties with certification and equivalences exist sub-regionally (e.g., OECS) and regionally. This situation interferes with efficient articulation between programs, especially for the smaller territories who send a higher proportion of students overseas. Present arrangements are costly in time and manpower and there is significant duplication of effort. The present arrangements need to be rationalized at both national and regional levels. One option is to establish a tertiary-level examinations council along the lines of the CXC at the secondary-school level. However, while this would facilitate standardized certification, care would have to be taken to ensure that it did not become overly prescriptive, resulting in a tendency for curriculum design to be determined by external examination requirements rather than by national needs. Particularly at the tertiary level, where national programs have to be responsive to local labor market requirements, this prescriptiveness could be counterproductive.

6.104 Another option would be to create national and regional councils for accreditation and articulation with broad-based representation from educational and training institutes, degree-awarding institutions, and employers in both the public and private sector. Their function would not be to set examinations, but to advise on course design and competency levels and to assist in the definition of equivalencies. Linkage between national and regional bodies would facilitate accreditation and articulation between national and overseas programs. This approach is similar to the use of regional accreditation councils in the USA. To be effective, whatever model is used, this kind of institution benefits from a degree of autonomy. The functions are complex, time-consuming, and require a high degree of professional expertise and significant resources. One approach might be to make them largely self-financing by charging institutions and governments fees for their services, or (as in Barbados) through payroll deductions.

Improving Resource Utilization

6.105 In formulating and implementing national education and training policies, account needs to be taken of the capacity of employers, private institutions, and non-government organizations. Based on the fragmentary evidence available, existing capacity appears to be significant in some fields but often overlooked (e.g., commercial, hotel work, management, rural self-employment, small business development). There is a need to establish systems for monitoring standards in these institutions. This kind of assessment will help rationalize resource use and reduce duplication.

6.106 On the evidence available, there is significant scope for more intensive use of public institution capacity. Increased part-time enrollment, participation in distance-education programs, and expanded adult education provision have been mentioned; other possibilities include contracting the training of apprentices, private, and public sector company employees, the self-employed, and entrepreneurs. Generally, private and NGO training institutions are currently more proactive than public ones in responding to these opportunities.

6.107 Further consolidation of training capacity might be appropriate. In the smaller countries, merging into a single institution (including nursing schools, agricultural colleges, youth skills training schemes, and teachers' colleges) will help effect economies of scale. In the larger ones, there is scope for consolidation of small sixth forms either into existing tertiary institutions or as larger sixth form colleges. Where appropriate, this consolidation might include government training units and non-government and private training institutions. Apart from scale economies, consolidation could help to increase the range of programs provided. This could be particularly helpful in responding to the need for more paraprofessional training. Among the OECS countries, governments may wish to consider further consolidation of specialist facilities. As noted above, however, the costs for non-nationals are relatively high, and any decision should consider the recurrent budget implications against alternative strategies for delivery.

Diversification of Finance

6.108 This study has identified the need to increase access and improve quality and effectiveness in tertiary education and training. Under existing fiscal pressures, and the competing claims of primary and secondary education, it may prove difficult for Caribbean governments to provide the levels of funding required for these improvements. However, there appears to be substantial opportunities for diversifying sources of finance in this part of the education system. For the employed, the employers and workers could be required to share the costs of training and a shift away from pre-employment training to in-service training, together with an increased utilization of NGOs, private institutions, and apprenticeship schemes, which would also release the pressure on governments to provide this service. A further option would be to introduce a payroll levy or tax. Some Caribbean governments have introduced such systems with some success, but there needs to be sensitivity to the impact on employment of higher labor costs. This training levy or tax might be used to fund the national training authority as in Barbados. The authority could then target training (through grants) consistent with overall industrial and economic need. Experience elsewhere suggests that levies, rather than taxes, are more effective in the low-middle income countries where the tax base is too small to generate sufficient revenue.

6.109 The high level of migration of trained people suggests that on equity grounds alone there is a strong case for increasing the extent to which fees are charged. Some Caribbean countries (e.g., Belize, Grenada, St. Lucia, and Jamaica) have already adopted this approach in selected fields. The level of private institutional training already indicates a certain willingness of students to pay for training. User fees policy could be designed to reduce the inequalities in cost-sharing between full-time and part-time enrollment, public/private institutions, academic, and technical programs identified earlier. Income-contingent grants and subsidies could be provided for disadvantaged groups to ensure equal access. In combination with user fees, governments could consider expansion of student loan schemes for this part of the education system.

E. Summary of Policy and Investment Options

6.110 The Policy and Investment Options are as follows:

1. The principal objective for this sector should be to significantly increase enrollments within the context of quite severe constraints on government finance. A suggested overall strategy would include three actions:

   (a) The organization of teaching in public sector institutions in ways that minimize problems of access for both full- and part-time students, e.g., more modular, competence-based approaches and distance teaching.

(b) Systematic encouragement of the expansion of private training institutions and in-firm training, including consideration of the policy environment within which they operate and are constrained, and possible subsidies when they can provide services less expensively than the public sector.

(c) Try to ensure that full costs are levied on firms for any training programs provided for them by the public sector.

2. Increase the number and types of bridging courses is also recommended to allow more secondary school graduates to eventually enter full tertiary level courses.

3. Labor market analysis would be strengthened by using a wider range of techniques to anticipate changes in demand and strengthen national training boards with employer, trade unions, and government representation by increasing access to training funds.

4. Consolidation of individual training institutions would further reduce unit costs through larger classes and greater facilities use, possibly by extending the teaching day and increasing part-time programs.

5. Sources of finance could be diversified, including the development of fee and loan schemes and rationalization of the subsidy levels for different categories of students (e.g., part- and full-time, teacher training and technical courses).

6. An attempt could be made to increase male enrollments in the teacher training and female enrollments in technical subjects.

7. Consider increasing the emphasis on self-employment in skills training programs, using inputs from NGOs and the private sector.

8. The problems of certification and equivalencies can be confronted both subregionally (OECS) and regionally. Options might include some form of tertiary examination council similar to the CXC, or nonexamining bodies through focussing on accreditation and facilitating articulation between and among educational levels.

9. Provide greater managerial and financial autonomy to tertiary institutions, which should lead to more efficient and cost-effective programs.

10. Consider replacing the A-level course of study with a broader educational experience, while not diluting the quality expectations for university entry.

CHAPTER VII

UNIVERSITY EDUCATION

7.1 In the English-speaking Caribbean, a distinction is made between tertiary and higher education. The latter is generally defined as those programs directly managed and certificated, on- and off-campus, by the University of the West Indies (UWI) and the University of Guyana (UG), plus undergraduate programs offered at the College of Arts, Science and Technology (CAST), Jamaica, and the University College of Belize (UCB).

7.2 Prior to 1948, the main source of higher education for English-speaking Caribbean students was the London University external degree programs while those who could afford to, or received scholarships, went to British universities. The University College of the West Indies was established at Mona, Jamaica in 1948. Its purpose was to serve the English-speaking Caribbean, including The Bahamas, Belize (then British Honduras), and Guyana (then British Guiana). The British Government provided buildings, equipment and scholarships and Caribbean governments were required to meet operating costs. In 1960, the Trinidad campus, based around the Imperial College of Tropical Agriculture, was established at St. Augustine and the Barbados campus was established in 1963, moving to the present Cave Hill site in 1968. In 1978, part of the Faculty of Social Science (Mona) was decentralized to The Bahamas, later becoming the UWI Center for Hotel and Tourism Management. The University of Guyana was established in 1962. Initially the programs were restricted to the humanities, natural sciences, and social sciences. At various intervals, new schools were added: education (1967), technology (1969), agriculture (1977), and health sciences (1981).

7.3 During the late 1970s and 1980s the non-campus countries (NCCs) established and consolidated their own tertiary institutions. This development partly derived from the achievement of political independence and partly from the changes in the financing system for UWI introduced in 1973, which resulted in NCCs being unwilling or unable to send the same numbers of students. In response to these changing institutional and enrollment patterns, UWI acted in several ways. First, distance education programs were developed: the Challenge program (1977) and a multimedia distance teaching program (UWIDITE, 1983), which deliver part-time, first-year undergraduate and certificate programs. Second, selective decentralized delivery of preliminary and first-year arts and natural science programs in NCC tertiary institutions was introduced in St. Lucia and Antigua in 1987. Third, UWI strengthened its capacity for accreditation and validation of off-campus programs.

7.4 The past 20 years has seen a change in program patterns within tertiary institutions. There has been a shift away from academic courses to technical-vocational and paraprofessional ones, which now constitute over 55 percent of enrollment. This has created a demand for progression to more advanced programs in these areas. The universities have not been able to completely meet this demand. As a result, East Caribbean countries have strengthened links with the University of the Virgin Islands

(UVI); CAST has introduced undergraduate programs in business, technology and technical education; and students continue to look to North America for training. Total student visas issued in the United States to English-speaking Caribbean citizens (apart from Guyana) between 1980 and 1984 were 22,378 (Simmons and Plaza 1991). In 1983-84 it is reported that 11,444 Caribbean students were enrolled in overseas (mainly North American) universities or similar training institutions (USAID, 1986). Total enrollment at UWI and UG that year was 11,606. However, Caribbean students on visas in Canada fell from 1,200 in 1980 to 760 in 1990. Only for OECS students have they remained constant at around 130.

7.5 The outcome of this evolution of higher education is a widely scattered capacity for delivery and management. There are at least 28 university sites across the English-speaking Caribbean with an average unit size of 500-600. If tertiary institutions which offer university programs or articulate with them are also included, the number rises to at least 75. Within this complex web, programs are offered at varying levels with different forms of certification and accreditation, under a variety of management systems.

7.6 The expansion of higher education has been driven by a mixture of political, social, and economic motivations. Predominantly, the universities are expected to generate qualified manpower to fill scientific, technical, professional and managerial positions in government and the private sector. Census figures for 1980 indicate that the number of university graduates available for work remains small in most Caribbean countries. Henry (1988) reports that in Grenada, St. Vincent, Dominica, Belize and Guyana, the figure is less than 2 percent of the labor force. In Trinidad, it hovers around 3 percent; in Barbados, less than 4 percent. In contrast, the median for 12 Latin American countries in the late seventies and eighties was 6.6 percent (Winkler, 1990). Bourne (1988) reports that in Jamaica in 1984, less than 1 percent of the population aged 14 and over possessed a university degree, and that in a sample of Caribbean countries only 12 percent of senior and middle managers had a university degree. In 1990, less than 13 percent of Caribbean school teachers had a university degree and in a sample of five OECS countries the figure was less than 8 percent (World Bank, 1990d).

7.7 Although the development of highly trained manpower is regarded as the most important objective of higher education, the universities are expected to assume additional responsibilities. They are seen as the source of indigenous research and development activity and as intermediaries for the modification of scientific and technical knowledge developed elsewhere to suit Caribbean requirements. Universities are also expected to provide consultancy and advisory services for both the public and private sectors. Members of higher education institutions are also sought for independent advice on social and political issues and the maintenance of Caribbean cultural traditions. In spite of, or perhaps because of, the high expectations developed for the universities, they are also subject to criticisms ranging from fostering unrealistic occupational expectations in students to a lack of productive research.

A. Access and Coverage

Enrollment Patterns

7.8 Between 1960 and the late 1980s, enrollment in higher education across the Caribbean is reported to have risen from 4,680 to 162,400 (see Appendix table A-24). The growth in absolute numbers is dominated by the Dominican Republic, where enrollments rose astronomically from 3,400 to 139,300 over the period. Nevertheless, within the English-speaking Caribbean, enrollments at UWI and UG also increased. Between 1960 and 1988, they increased from 781 to 11,711 at UWI and by 60 percent between 1973 and 1988 at UG. While this growth is significant, it does not compare favorably with other parts of the developing world. In the 1970s and 1980s, rates of growth of enrollments in the English-speaking Caribbean fell well below those in Africa and Latin America.

7.9 Consequently, enrollment levels in the English-speaking Caribbean remain well below those in most other regions. In 1987, higher education enrollments per 100,000 population averaged 198. This compared to 1,804 in the Dominican Republic. In seven English-speaking countries the ratio was even below that for Haiti (101), one of the poorest countries in the developing world. Enrollments per 100,000 average around 650 in the Middle East and Asian countries and 1,250 in Latin America (see Appendix Table A-25).

7.10 In addition, the expansion that occurred in the English-speaking countries has been uneven, resulting in wide variations in enrollment ratios from 0.2 percent of 20-24 year olds in Belize to 4.9 percent in Barbados. More generally, there are substantial variations between the UWI campus countries (median 3.4 percent) and the non-campus countries (median 0.7 percent) (see Table A-26).

7.11 The past 30 years have seen significant changes in UWI enrollment according to country of origin (Table 7.1). In 1986/87, the NCCs constituted 21 percent of the total population in the English-speaking Caribbean. Yet over the last 30 years, their proportion of enrollment has ranged between a high of 17 percent 1960/61 to a low of 5.1 percent in 1988/89. A substantial decline in non-campus country enrollments occurred with the introduction of a new financing formula in 1973 which then resulted in efforts by UWI to decentralize program delivery through the introduction of distance education. By 1986/87, enrollment in off-campus programs totalled 555 students of which more than half were from the non-campus countries. These off-campus enrollments represented 36 percent of UWI's NCC enrollment (Parker, 1988). While enrollments of these countries represent up to 7 percent of UWI totals, they are still well short of an equitable proportion and, equally important, these part-time, off-campus programs do not guarantee the financial means by which to continue studying. Many students have begun to look elsewhere for access to university education. Enrollments at the University of the Virgin Islands (UVI) now constitute 14 percent of total enrollment of OECS students in regional universities compared to 53 percent in UWI campuses and 33 percent off-campus. In addition to UWI and UG, the CAST, Jamaica has introduced degree programs in a number of paraprofessional and technical fields. Although many programs are still in their infancy, enrollments are growing. For example, the technical education degree programs grew from 34 in 1982 to 156 in 1988, all on a part-time, in-service basis during summer vacations. UCB (Belize) has degree programs in Business Administration and Education; enrollments in these programs totalled 201 in 1990.

Table 7.1: CARIBBEAN - UNIVERSITY ENROLLMENT GROWTH: UNIVERSITY OF WEST INDIES (1960/61 - 1988/89)

Country	Enrollments 1960/61	1968/69	1978/79	1988/89	1988/89 / 1960/61
Barbados	82	412	1,015	1,699	20.7
Jamaica	442	1,833	4,148	5,209	11.8
Trinidad	126	1,258	2,648	4,206	33.3
Non-Campus Countries	131	439	494	603	4.6

Source: UWI (1990).

7.12 As noted earlier, despite the expansion of university education within the Region, Caribbean students continue to go overseas, especially to the United States and Canada, for higher education. The majority of overseas study is privately financed, which makes estimates rather unreliable. Table 7.2 provides some data for 1983 by country comparing enrollments in Caribbean and United States institutions. Obviously, for all Caribbean countries, overseas education is important. Some governments have a policy of funding overseas study. In Barbados, for example, students who gain the highest A-level scores (scholars) can go anywhere in the world and follow their own choice of study. In 1990, all but 4 of 22 scholars chose to study outside the Region.

Table 7.2: HIGHER EDUCATION ENROLLMENTS: CARIBBEAN AND UNITED STATES (1983)

Origin	Caribbean (UWI, UG) (1)	United States (2)	Ratio 2/1
Jamaica	4,800	2,300	0.5
Barbados	1,200	300	0.3
Trinidad	3,300	1,800	0.6
Guyana a/	1,800	1,000	0.6
The Bahamas	100	1,500	15.0
Other NCCs a/	400	3,900	9.8

a/ Guyana and NCC figures are estimates.

Source: UWI and UG Statistics (1983); Bourne (1988).

Those in the second-tier of ability (exhibitioners) are expected to study at UWI if an appropriate course is available; however, they sometimes avoid this by devising a course not available regionally. In 1989, 268 Barbadians wholly or partly sponsored by government were studying in the United Kingdom, the United States, and Canada. Guyana shows a similar pattern. IDB (1985) reports that of 214 government-sponsored students, 112 were studying overseas.

7.13 In most of the faculties at UWI and UG, enrollments have grown over the past three decades. Nevertheless, there are striking variations. In Guyana, enrollments in arts, natural science, and education have declined, in technology they have grown by less than 1 percent a year over the past 15 years and in agriculture there has been zero growth. Only in the social sciences and health sciences have enrollments grown in the past five years (Appendix Table A-27). The pattern at UWI is similar. Again over the past five years, annual growth rates in enrollment have been negligible in law and medicine while in engineering, natural science, agriculture, arts and general studies they have been roughly 2 percent a year. Only in the social sciences have enrollments grown substantially, at a level of 8 percent a year (Appendix Table A-28).

7.14 Enrollments in higher degree programs at UWI have increased substantially. In 1963, 32 students were enrolled but by 1988 the figure reached 1,544. Recently, the growth rate has averaged 9 percent a year. There is substantial variation by campus and country of origin. Higher degree work at Cave Hill represents only 8 percent of the UWI total and only 6 percent of its own total enrollment. On both counts, these levels are substantially below those of the other two campuses. Barbadians are also underrepresented in higher degree work, representing only 6.9 percent of UWI totals compared to 14.3 percent of overall UWI enrollment (Appendix Tables A-29, A-30). The number enrolled for higher degrees at UG is small; 32 in masters programs in 1983.

7.15 Many students enroll for higher degree work overseas. Based on training statistics from donors, an estimated 150-250 students annually enroll in masters and doctorate courses outside the Region. Half of these go to Britain. In addition, there are many privately financed students. The UWI higher degree intake was 486 (Cave Hill 32, Mona 242, St. Augustine 212) in 1988. Although no definitive data are available, Bourne (1988) suggests that more higher degree work occurs outside the Region than within it.

Causes of Low Levels of Coverage

7.16 The comparatively low levels of access to higher education in the Caribbean have already been noted. The proportion of the relevant age population enrolled in the regional universities is low. Seven out of the nineteen Caribbean countries have enrollment ratios of less than 1 percent, and a further ten below 5 percent. These are all English-speaking countries. The enrollment ratios are low compared to other parts of the developing world. Winkler (1990) reports that for Latin America, enrollment ratios in universities in 1985 ranged between 36.4 percent (Argentina) and 8.4 percent (El Salvador), and in a sample of 17 countries, in all but three enrollment ratios were 10 percent or more while six had ratios greater than 20 percent. The Caribbean situation is complicated by the lack of information about how many study in overseas institutions, but the overall picture is of relatively low levels of access to higher education, the low income status of many countries undoubtedly playing a part in the totals.

7.17 The two English-speaking universities do not provide open access to higher education. A study by the UWI Cave Hill campus indicated that the ratio of places to qualified applicants is declining in all faculties. This is most apparent in law and social sciences, where less than 25 percent of qualified students are offered a place. This picture is confirmed by Loubser *et al.* (1989) who report that the qualified/places ratio for some faculties and for different campuses is as high as 5 to 1 for medicine, 4 to 1 in law, 3 to 1 in social sciences, and 1.5 to 1 in natural sciences. However, regional data in Table 7.3 comparing the number of students who passed two A levels with new first-year admissions suggests that across the University as a whole, the availability of places does not restrict access. Obviously, there are large variations by subject. Using the "five CXC passes" benchmark at UG, there are two admissions for each qualifier. In other words, availability of places does not restrict access at UG.

7.18 UWI has often been criticized for its inflexibility regarding admission standards compared to North American universities, particularly the two A-level requirement. In reality, its entry requirements are flexible and some four-year programs require CXC qualifications only. The main purpose of A levels at UWI appears to be to select the best-qualified students for the limited number of places available for full-time courses. Evidence presented to the Marshall review (1986) at Cave Hill supports this thesis. For the full-time programs, 88 percent of natural science undergraduates had two A levels; for social sciences, and arts and general studies, the proportions were 66 and 75 percent, respectively.

Table 7.3: CARIBBEAN - RATIO OF QUALIFIERS TO STUDENTS ADMITTED
UWI AND UG: SELECTED YEARS

Institution/ Qualification (1) (2)	No. of Students Qualifying	New First Degree Admissions a/	Ratio (2)/(1)
UWI (2 A-levels)b/	1,930	2,725	1.4
UG (2 A-levels)b/	74	370	5.0
UWI (5+ Passes)c/	4,730	2,725	0.6
UG (5+ Passes)c/	182	370	2.0
UWI (4+ Passes)c/	6,946	2,725	0.4
UG (4+ Passes)c/	294	370	1.3

a/ Admissions do not include Challenge or UWIDITE enrollments.
b/ Number of qualifiers based on scaled estimated from 1986 GCE A-level results.
c/ Actual data from CXC (1990).

Source: CXC (1990); UWI (1988); UG (1989).

7.19 For those studying in preliminary or part-time programs the number with two A-levels dropped to 13 percent natural science, 18 percent social sciences; 9 percent arts and general studies and 5 percent for law. Essentially, the use and retention of A-levels are a consequence of limited access and resources rather than the cause. For example, in the NCCs where finance and local availability of UWI programs are constraints, A-levels are used to screen candidates for government and donor scholarships. In all countries (especially Barbados and Guyana), another significant function of A-levels is to screen students for the prized full-cost undergraduate training awards overseas. (The effect of A-level programs on resource utilization is discussed in Section C.)

7.20 In addition to entry requirements, restrictions to higher education in the Caribbean are linked to several factors, including the high private costs of university education, inadequate financing mechanisms, the limited supply of higher education programs at times convenient for working individuals, and the unavailability of specific programs. Cross-cutting these factors are gender, urban-rural, and campus/non-campus country disparities. The influence of these factors is examined below.

7.21 Financing Policies and Access. The costs of studying at UWI consist of two types: the economic cost based on the educational costs of each faculty and campus, and other charges, such as board, fees, and books. Levels of economic cost are given in Appendix Table A-31 for 1984 and 1990. For all faculties, the Jamaica campus is the cheapest and Barbados the most expensive, while the science-based faculties are more expensive than the arts. For example at Barbados, the natural sciences cost is 37 percent more than for arts and general studies. By 1990, "other charges" amounted to roughly US$3,000 a year at Mona, US$5,200 at St. Augustine and US$6,900 at Cave Hill. Averaged across faculties, total costs per student were US$8,500 at Mona, US$12,263 at St. Augustine, and US$17,850 at Cave Hill. For the NCCs there is the additional cost of air fares.

7.22 Under the present financing arrangements at UWI, it is anticipated that national governments will pay the full economic cost. Quite separately, students (with assistance in most cases from governments, donors and other sources) pay tuition fees, guild fees, and costs relating to board, meals, and books. The economic cost amounts to 60-70 percent of total costs; "other charges" represent 30-40 percent depending on the nature of the program.

7.23 In 1986, Jamaica introduced Cess, whereby students are required to pay 30 percent of the economic cost; Trinidad introduced a similar scheme in 1988/89; and the Barbados government still covers the full economic cost. In some cases, where government does not undertake to pay the economic cost, either from its own resources or jointly with a donor, students meet these costs from their own resources. There has been a tendency among the NCC governments to place limits on the number of students they are willing or able to sponsor.

7.24 The present financing system at UWI contributes to inequalities both in cost-sharing and the absolute level of public subsidy received by students depending on the course of study, the campus attended, and the country of origin. A Jamaican studying law at Cave Hill pays 59 percent of total costs compared to 54 percent for one following natural science in Jamaica; yet, the former receives approximately twice the level of financial support from government. The government contributions for a Trinidadian studying arts, engineering or medicine at St. Augustine are 50, 63 and 68 percent, respectively, of total costs, and a similar pattern exists for Barbadian students (Appendix Tables A-32, A-33, A-34). Students enrolled in prestigious programs (law, medicine, engineering) that usually lead to higher incomes receive the highest level of government support. A recent University report suggested, among other things, that economic costs should be set by faculty at a similar level across all campuses (UWI 1991).

7.25 The system is more complex for the NCCs. A substantial proportion of their students receive support from donor scholarships, which usually cover 30 percent of the economic cost plus tuition, travel, board, etc. In addition, campus countries cover 40 percent of the economic cost and NCC governments the remaining 30 percent. Using a 2:1 ratio for economic cost/other charges, this means that NCC governments are paying 20 percent of the total cost, campus countries 27 percent, and donors 53 percent. In effect, the NCCs are being heavily subsidized by the three campus countries.

7.26 The situation has implications for donor scholarship policy to UWI, particularly in the NCCs. At present, donors usually sponsor individual students after consultation with governments. This can result in what may be characterized as "feast or famine." Donor-funded students often bear little private cost since governments tend to link payment of their proportion of economic cost to donor funding; in addition, many civil servants receive salary while in training. At the other extreme, students without sponsorship pay 73 percent of the total cost, campus countries 27 percent; thus their own government's contribution is negligible. Some policy options to enhance equity will be discussed in section C.

7.27 Even when governments pay the economic costs, private costs for board and books can be high. A Jamaican studying at Cave Hill can pay up to 10 times GNP per capita; a Trinidadian 2 times, and an OECS student 4 times (Appendix Table A-35). While some students can economize by living at home, private costs can act as a significant obstacle to higher education, especially for students from low-income families. At present, part-time employment opportunities on and off campus are limited.

7.28 Student loan schemes have been introduced in some Caribbean countries with varying degrees of success. The CDB schemes for the OECS countries offer some assistance; however, as reported in the UWI institutional review (Loubser *et al.*, 1988), the ceiling for individual loans is below the total fees and economic cost for UWI. The scheme is generally used as a financial supplement for students who have attracted sponsorship from elsewhere. For example, the Montserrat/CDB scheme provides loans of up to 20 percent of economic cost for government-sponsored students at UWI. This arrangement limits the scheme's range and scope in increasing access. There are already signs of repayment problems with the Jamaica loan scheme. In 1985/86, loan payments were in arrears by US$1 million (or 27 percent of the total principal outstanding), and of some 15,650 loans at the repayment stage, 41 percent were in arrears (World Bank, 1987). Recent reports suggest that arrears have reached US$1.5 million. The Barbados loan scheme is faring somewhat better. It was reported that in 1988, 14 percent of the loans were in arrears, amounting to 8.3 percent of the principal outstanding (IDB, 1988).

7.29 Despite limitations, existing loan schemes have increased access to higher education and reduced public costs. However, there is evidence that students prefer to take out a loan to study overseas rather than within the Region. Data from the Barbados loan scheme in 1990 confirms this pattern. Of the 250 students receiving loans, 64 percent were studying overseas, 28 percent at UWI, and 8 percent at other Caribbean institutions. The CDB (1988) report on the Montserrat loan scheme highlights the rationale: "The main reasons for this preference [extra-regional training] are: (i) the ability to supplement student loan scheme funds by depending on relatives in the US, Canada, and UK; (ii) easier admission into US and Canadian schools; and (iii) easier availability of part-time employment." The average value of the loans is US$30,000 over four years. This suggests that students are finding roughly 50-75 percent of costs from other sources.

7.30 Despite the expansion of student loan schemes a recent survey in Jamaica, following the introduction of CESS in 1986, indicates that family, relatives, and personal savings are still significant sources of private finance (Appendix Table A-36). For instance between 60 and 75 percent receive support from family and relatives (EEC, 1989). Similarly, Trinidadian students are heavily reliant on family finance, especially law students. Personal savings (unlike Jamaica) were insignificant. There was some variation between men and women: 90 percent of women and 70 percent of men received family funding, while only 9 percent of women received scholarships compared to 24 percent of men.

Limited Part-time Classes

7.31 Due to financial constraints some students, especially those from low-income families, cannot afford to attend full-time programs. Provision of part-time programs can serve two purposes. First, it can equalize access for students from poor families who need to work. Second, it can provide catch-up programs for those students with an inadequate secondary education, again often from low-income families. Part-time enrollment by nationals of the campus countries is increasing. At Mona, 20 percent of the enrollment is part-time, at Cave Hill 36 percent, and at St. Augustine 13 percent. Part-time students comprise 41 percent of the total at UG (Appendix Table A-37). Further expansion may be required.

Limited Availability of Specific Programs

7.32 Another factor affecting access is the limited range of programs at various levels and in different fields available in the Region's higher education institutions. Several studies, including the UWI institutional review, have pointed to the shortage of undergraduate programs in management studies, technical-vocational teacher training, specialized engineering fields, business, and agricultural entrepreneurship. While there have recently been some additional courses mounted in such fields (and more are promised), this assessment is confirmed by a survey of governments' overseas training programs, for example, Barbados (see Appendix Table A-38). While many of these programs are available at technician/diploma level, there are uncertainties about progression to more advanced courses. As a result, students take the overseas route where the chances of progression are greater. The initiative by CAST to offer technician courses that articulate with degree programs is a response to this situation. Nevertheless, in general, such routes remain underdeveloped. Another deficiency is the shortage of refresher and skill upgrading courses for professionals, managers, and paraprofessionals. This is again confirmed by a survey of governments' overseas training programs. Governments and donors report heavy demand for short-course training in public sector management (health, education, customs, and excise), specialist technical fields, and business areas.

Gender

7.33 One group of potential students often discriminated against across the world are women. In the English-speaking Caribbean this does not appear to be the general case. At UWI, the percentage of women enrolled increased from 33 percent in 1962 to 54 percent in 1988 (Loubser *et al.*, 1988). At UG, it rose from 38 percent in 1984 to 49 percent in 1989 (IDB, 1989). As in most countries, however, there are gender differences across subjects. Women are underrepresented in engineering (only 12 percent) and the science-based faculties and overrepresented in arts and general studies and education. At UG, a similar pattern emerges, with substantial underrepresentation in technology and to a lesser extent natural sciences. Nevertheless, the proportion of women in natural sciences at UWI increased from 41 percent to 48 percent between 1984 and 1988 and in agriculture from 15 percent to 43 percent (see Appendix Table A-39). Within the OECS countries, women have not made the same comparative inroads and represent only 39 percent of total UWI enrollment compared to 54 percent Region-wide. Nevertheless, the share of enrollment did increase from 29 percent over the 1980s (Ellis, 1990). At UCB (Belize), females are roughly 54% of total enrollment (Ministry of Education, Belize).

Geographical Factors

7.34 The two regional universities have made significant efforts to decentralize through outreach activities focussed on the UWI Schools of Continuing Education, the distance teaching experiment (UWIDITE) and in Guyana via the Institute of Adult and Continuing Education. These are planned to expand further. However, they do not go far enough to reduce disadvantages for students from rural areas. In the NCCs, for example, the facilities are concentrated in urban areas and UWIDITE is only available in 7 of the 14 UWI countries. Much of the teaching still requires direct contact between students and staff and the use of weekend supervised study is limited. As a result, Challenge and UWIDITE students tend to come from urban areas, especially in those countries where commuting can be difficult and costly (e.g., Belize, Dominica, St. Lucia, Trinidad, and Jamaica).

Consequences of Limited Coverage

7.35 The overall low level of higher education coverage, particularly in the areas of science, technology and management, results in potential losses of productivity and international competitiveness at a time when Caribbean economies are facing economic uncertainty. In addition, limitations on access across UWI's participating territories and the resulting brain drain undermine the Regional identity of the university and could affect its overall responsiveness to the Region's development needs. Particularly in the non-campus countries, the shortage of top-level manpower will not only undermine growth potential, but will affect the sustainability of the NCCs own tertiary institutions.

Without such staff, quality will be effected and the potential to offer university programs reduced.

7.36 Access difficulties are the most significant factor contributing to the brain drain to North America. The loss of potential students undermines the quality of the Regional universities. First-degree work overseas increases the likelihood of students not returning to the region. For example, it is estimated that 30-40 percent of Trinidadian students educated in North America do not return (Bourne, 1988). This, in turn, increases the chances that students will continue with graduate work overseas, thereby reducing the universities' potential at the postgraduate level, and making it more difficult for UWI and UG to recruit high-quality academic staff.

B. Quality and Effectiveness

7.37 Various measures can be used to assess the quality and effectiveness of higher education. These include the match between the supply of graduates and labor market demand, as indicated through levels of graduate employment, vacancy surveys, the proportion of expatriate labor in the work force and trends in graduate wage levels. Proxy indicators of effectiveness include the time it takes for students to graduate and levels of repetition and dropout during the program. Research activity can be judged by the output of postgraduate researchers and the impact of university research on Caribbean society. Not all the required measures are available to determine its full contribution.

Output from Higher Education

7.38 This subsection considers the volume of graduate output over the period 1954-85 and examines recent trends to assess the impact of the two regional universities on the level of university graduates in the labor force. It also assesses the output by field of study as an indicator of responsiveness to changes in economic and social needs.

7.39 The output of graduates from UWI and UG constitutes only a small proportion of the present populations. Assuming that all UWI graduates remained in the Region (which is unlikely), they would represent only 1.2 percent of the 1988 Barbados population and 0.3 percent of the NCC population, while UG graduates represent only 0.9 percent of the Guyana population. As percentages of the labor force, each of these figures will increase. However, in broad terms, it is clear that the levels of output have had a negligible impact on raising the proportion of university graduates in the work force and population.

7.40 As Table 7.4 illustrates, the average annual output for individual countries since UWI and UG's establishment has been low. Only Guyana, Trinidad, and Jamaica have produced more than 200 graduates a year over the period, and none of the non-campus countries has had an average output of more than 10 a year. Annual output increases of graduates has been uneven. In the UWI campus countries, outputs have increased between two and three times. The pattern for the non-campus countries is mixed. Some have roughly doubled their output (e.g., St. Lucia, St. Vincent, St. Kitts, Dominica) while others have shown little change. Despite the overall improvements in the level of graduate output, the impact on raising the level of education in the labor force is small. An estimate can be obtained by measuring the annual output as a proportion of the work force (Appendix Table A-40). For instance, if output is maintained at present levels in Barbados, it will annually represent 0.18 percent of the projected work force by the year 2000. In other words, it will take six years to raise the proportion of university graduates in the work force by 1 percent. For Dominica, St. Lucia, and St. Vincent it will take roughly 17 years, for Grenada 25 years, and Belize, 100 years. The conclusion is obvious. A quantum leap in the level of graduate output is required to have any real impact on the level of graduates in the work force, especially in the non-campus countries.

Table 7.4: CARIBBEAN - CHANGES IN FIRST DEGREE OUTPUT UWI AND UG: SELECTED YEARS, BY COUNTRY

Country	Average (1954/88)	1985	1988	Country	Average (1954/88)	1985	1988
Anguilla	<1	1	1	Jamaica	377	821	757
Antigua	8	4	10	Montserrat	3	2	15
The Bahamas	10	11	10	St. Kitts-Nevis	8	10	14
Barbados	86	175	212	St. Lucia	11	31	26
Belize	7	11	6	St. Vincent	8	4	22
BVI	<2	2	2	Trinidad	263	535	631
Cayman Is.	<1	-	1	TCI	<1	1	-
Dominica	7	13	16	Guyana a/	335	426	327
Grenada	10	9	13				

a/ For years 1967-88 only.

Source: UWI (1985 and 1988); UG Statistics (1988).

7.41 The output from UWI for different fields of study is set out in Table 7.5. The highest proportion of first degrees has been in arts and general studies (30 percent), followed by natural science and social science (20 percent each), engineering and medicine (8 percent each), law (6 percent), agriculture (4 percent), and education (2 percent). In the output of higher degrees, social science leads the way (24 percent) followed by natural science (15 percent) and medicine (14 percent). Agriculture and engineering each produced only 10 percent of higher degree output, education 9 percent and law 1 percent of the total. Arts and general studies, with the highest first-degree output, generated only 10 percent of the higher degrees awarded. In certificate and diploma courses, education (46 percent) and social sciences (35 percent) predominate. Agriculture, engineering, and natural science make negligible contributions. The UWI Development Plan 1990-2000 (UWI 1990) comments:

> The most striking fact of the output configuration of the University over the 37 year period is the relative paucity of graduates in agriculture, engineering, natural sciences and medical sciences despite the relative early origin of these faculties within the University system.

Table 7.5: CARIBBEAN - TOTAL FIRST DEGREES, CERTIFICATES, DIPLOMAS AND HIGHER DEGREES 1954-88: BY FACULTY: UWI

Faculty	First Degree	Certificates & Diplomas	Higher Degrees	Total
Agriculture	1,190	32	227	1,449
Arts & Gen. Studies	9,380	481	244	10,105
Education	836	4,824	193	5,853
Engineering	2,633	120	229	2,982
Law	1,752	19	21	1,792
Medical Sci.	2,562	1,219	316	4,097
Natural Sci.	6,294	34	417	6,745
Social Sci.	6,135	3,707	546	10,388
Total	30,782	10,436	2,193	43,411

Source: UWI (1990).

Appendix Table A-41 sets out the pattern at UG, for first-degree and certificate/diploma courses. Between 1966 and 1988, the highest proportion of UG awards was in the social sciences (30 percent), followed by education (19 percent), technology (18 percent), arts (15 percent), and natural sciences (13 percent).

7.42 A useful indicator of university responsiveness to changing market demands is the range of specialized certificate/diploma courses that provide flexibility in admission requirements. In 1988 UWI graduated over 300 diploma students in public administration, management studies, labor, nutrition, and social work, over 350 with education qualifications, and over 50 in health management, nursing administration, and food technology. Less than 10 students gained specialist diplomas in each of the remaining faculties. There appears to be considerable scope for expansion of certificate and diploma programs, especially in scientific and technological fields, modern languages and specialist legal fields. With some rationalization of content and admission requirements, these non-degree programs could provide for much of the paraprofessional training required in the Region. In addition, the certificate/diploma courses could provide for catch-up programs progressing to first-degree programs.

7.43 The non-campus countries are again underrepresented in the certificate/diploma programs. Most of the programs are taught on campus, which produces the same access difficulties outlined earlier. Altogether, non-campus country students have been awarded only 9.5 percent of the total of certificates and diplomas (Appendix Table A-42). Distance education approaches have been used for public administration certificate courses with some impact on access and output. For example, the NCCs receive 20 percent of awards in public administration, largely through off-campus study. There is considerable scope for expansion of distance education approaches to improve both access and output of graduates at this level.

Tracer Studies on University Graduates

7.44 Tracer studies on UWI graduates provide the most useful information on both the destination of graduates in the labor market and the time taken to find employment. The Mona and St. Augustine campuses of UWI carry out these studies annually. Table 7.6 describes the results for 1980, 1985, and 1989. Several trends can be identified. First, in both sets of studies the percentage of graduates reported as unemployed one year after graduation increased between 1980 and 1989. In the case of Trinidad, this figure reached 8.1 percent for the 1989 cohort and for Jamaica 1.6 percent. The destination of around one-third of graduates is generally unknown. A second trend is the shift towards private sector employment. In Jamaica, public sector employment (in government service, teaching, and UWI) dropped from 62.3 to 41.9 percent while private sector work rose from 8.1 to 17.9 percent between 1980 and 1989. In Trinidad, the same shift is observed; public sector employment fell from 41.9 to 25.1 percent while those finding work in the private sector rose from 15 to 23.9 percent. Of particular note is the decline in the percentage of graduates entering teaching and the fall (in the case of Trinidad) of government service employment from 22 to 9.7 percent between 1980 and 1989.

Table 7.6: CARIBBEAN - EMPLOYMENT DISTRIBUTION OF MONA AND ST. MONATINE GRADUATES: 1980, 1985, AND 1989 (percent)

	Post Graduate	Govt. Service	Teaching	UWI	Private Sector	Unemployed	Unknown
Mona							
1980	6.4	31.6	25.6	5.1	8.1	0.2	23.0
1985	5.6	29.4	23.6	3.5	11.4	1.6	24.9
1989	1.5	24.6	16.7	0.6	17.9	1.6	37.1
St. Augustine							
1980	3.9	22.0	18.1	1.8	15.0	2.6	36.7
1985	7.4	21.2	11.5	2.0	12.3	3.5	43.4
1989	5.6	9.7	11.0	4.4	23.9	8.1	37.4

Source: UWI Graduate Placement Surveys, (1981, 1986, 1990).

7.45 The tracer studies also show interesting patterns when analyzed by field of undergraduate study. Table 7.7 illustrates the destination of arts and natural science graduates. In both the Jamaica and Trinidad studies, the proportions of both sets of graduates entering teaching and/or the public service declined while private sector representation increased. At both campuses, arts and natural science graduates also show the highest rates of unemployment. This downturn in employment prospects is most marked in Trinidad, where the unemployment rate increased from 4 to 9 percent for arts students and from 3 to 15 percent for natural science students (Table 7.8).

Table 7.7: CARIBBEAN - EMPLOYMENT DISTRIBUTION OF ARTS AND NATURAL SCIENCE GRADUATES: 1980, 1989 (in percent)

	1980			1989		
Campus/Faculty	Public Sector	Teaching	Private Sector	Public Sector	Teaching	Private Sector
Jamaica (Arts)	18.1	39.1	3.6	22.6	18.2	12.1
Trinidad (Arts)	9.1	42.8	2.3	9.1	24.8	7.2
Jamaica (Nat. Sci.)	17.8	24.3	7.8	19.8	12.5	26.0
Trinidad (Nat. Sci.)	14.9	29.7	8.2	10.2	17.0	19.1

Source: UWI Graduate Placement Surveys (1981, 1986, 1990).

7.46 The tracer study data can be interpreted in different ways. The shift towards the private sector may suggest that the restructuring of the public service and consequent job losses and reduced recruitment levels are discouraging public sector employment. Alternatively, it could be that graduates prefer to wait for a private sector vacancy, which usually provides higher salaries and better conditions of service. Without vacancy data and public/private sector wage differentials, it is difficult to be conclusive. If the shift towards private sector employment continues, however, and graduates can be absorbed, there are implications for university programming. There will need to be a greater concentration on private sector requirements, more practical attachments, and more emphasis on management and entrepreneurship. This employment trend argues for a greater participation of the private sector in the design of undergraduate and post-graduate programs to ensure they reflect their requirements. One option might be the introduction of "sandwich" degrees with large blocks of time (up to one year) in industry and commerce. Another option would be to use the long summer semester (under the revised UWI semester system) for work attachments.

Table 7.8: CARIBBEAN - REPORTED UNEMPLOYMENT FOR UWI GRADUATES BY FACULTY ST. AUGUSTINE, 1980 AND 1989 (percent)

	Reported Unemployment for UWI Graduates by Faculty: St. Augustine 1980 and 1989 (percent)				
Year	Arts/Gen. Stud.	Agriculture	Engineering	Nat. Sci.	Soc. Sci.
1980	3.8	1.4	2.5	2.7	1.2
1989	9.1	6.4	1.9	14.9	7.8

Source: UWI Graduate Placement Surveys (1981, 1990).

7.47 This shift toward private sector employment has implications for university financing. When much of higher education was directed at public sector needs, it was appropriate that governments provide a major share of financing. As the private sector becomes the major beneficiary, there is a strong argument for their greater participation in the financing of higher education. Equally, this shift may increase the private returns and strengthen the case for more self-financing by students. For international donors, who have traditionally targeted training assistance on employees within the public sector, there is a strong case for more assistance to the private sector.

7.48 The overview of the present labor market for university graduates demonstrates two major trends. First, that the proportion of university graduates in the labor force remains low in all English-speaking Caribbean countries when compared to other developing countries. Second, the economic changes mean that higher education will have become more responsive to private sector needs, which will require increased emphasis on an understanding of technology, management, and finance.

Effectiveness of Existing Programs

7.49 Admission rates to degree programs are low and, for the faculties in high demand, the academic requirements are demanding. Consequently, it might be anticipated that the effectiveness of higher education as measured by graduation, dropout, and repetition rates and progression to post-graduate work would be high. Table 7.9 shows the enrollment and graduation figures for UWI for 1982 and 1985, respectively. Between 12 and 42 percent of students failed to complete the program within the usual three years. Although it is not possible to distinguish between dropout and repetition, this evidence points to substantial student wastage. A longitudinal study at the University of Guyana (IDB, 1985) indicated that the dropout rates from degree and certificate/diploma courses were 34 percent and 25-30 percent, respectively. An analysis of graduation rates at Cave Hill (Marshall Review, 1986) confirms this general picture. For full-time programs, the graduation rates ranged between 75 and 85 percent and for the part-time programs between 28 and 85 percent. These figures can be contrasted to British universities where 94 percent of all first-year students graduate after three years.

7.50 Detailed repetition rates were not available for all campuses. However, the Marshall Review analysis was based on the graduation rate after the minimum period plus one year, which suggests repetition is significant and may be partially institutionalized. A substantial proportion take even longer to graduate. In natural sciences 20 percent take at least two additional years. Dropout rates vary considerably between faculties. The range was between 1 and 15 percent and for part-time students between 12 and 57 percent.

Table 7.9: CARIBBEAN - COMPARISON OF ENROLLMENT AND FIRST DEGREE GRADUATION: UWI 1982/85

Faculty	1982 Enrollment	1985 Graduation	% Difference
Arts and General Studies	674	420	-37.6
Social Sciences	465	375	-19.4
Education (2 yrs.)	60	53	-11.6
Natural Science	420	322	-30.4
Agriculture	106	62	-41.5

Source: UWI (1986).

7.51 There may be several causes of wastage, including inefficient articulation between secondary and higher education programs, inadequate preparation in secondary schools, financial pressures, poor teaching quality in universities, and inappropriate promotion and graduation standards. It is difficult to distinguish between the significance of these factors. However, it is worthwhile considering further the former, since it affects not only performance in higher education but also has a spillover effect on the organization of secondary and tertiary education and use of resources at these levels.

7.52 A major justification for the A level program is that it provides the required academic background for proceeding to a university degree program. Overall graduation rates are indeed slightly higher for students entering UWI with two A-levels (Appendix Table A-43). Data for the 1970s indicates that for direct-entry (three-year, full-time program), the graduation rate in natural science was 78 percent, compared to 75 percent for students with other entry qualifications; for social sciences, graduation rates were 80 percent, compared to 65 percent for other entry qualifications; for arts and general studies, 83 percent compared to 76 percent for other. More recent data for natural sciences, engineering and agriculture indicate that 60 percent of entrants with A-levels graduate after three years and 80 percent after four years. For CXC-entry students, there is a 40 percent dropout rate, and non-science course transfers are much higher.

7.53 Though two A-levels do not necessarily guarantee success in higher education nor do A-levels ensure very low levels of wastage, in some programs they appear to be correlated with better performance. In the Challenge program, which does not require 'A' levels for entry, pass rates on first-year Challenge programs range between 45 and 65 percent (Appendix Table A-44). The Marshall Review (1986) showed that for part-time natural science programs, the graduation rates were 41 and 30 percent for two A-level and CXC/O-level entrants, respectively; in arts and general studies 69 and 53 percent, respectively. It would, of course, be surprising if A-level entrants were not achieving better graduation rates since they are receiving an additional two years of schooling post O-level. The real issues are first the tradeoff between the additional resources required against the guarantees of quality and effectiveness at university level, and second the form of post-CXC secondary schooling retained. The current A-level program of two or three subjects is extremely narrow. Current thinking within the Caribbean Examinations Council is to broaden the focus of sixth-form studies, which seems an appropriate measure to take.

Research Activity and Capacity

7.54 UWI is the most important research institution in the Region. The best known component of its research activity is the Institute of Social and Economic Research (ISER), which has a Regional office on each campus. Other UWI research institutes are the Caribbean Meteorological Institute (CMI) and the Tropical Metabolism Research Unit (TMRU). Linked to UG there is the Institute for Applied Science and Technology (IAST). UWI has linkages with the Caribbean Industrial Research Institute (CARIRI), the Caribbean Agricultural Research and Development Institute (CARDI), and other medical and tourism research institutes. Notably, there is no research institute in science and technology.

7.55 One difficulty faced by UWI in consolidating research activity is its small size and the spatial distribution of university sites. The University has recently taken steps in the restructuring of the university center to coordinate research activities. The adoption of a thematic approach to research, bringing together teams of scholars and sharing facilities, should help to consolidate research effort and produce economies of scale. The impact of university research on the society at large is difficult to assess. The general opinion is that dissemination of UWI research needs to be improved. The UWI (1988) review commented, ". . . the community served by UWI, with few exceptions, seems to be unaware of UWI's research activity." As a result, the impact is likely to be limited. Potentially, it could be substantial.

The Universities' Response

7.56 The graduate tracer studies suggest a decline in public employment prospects and a shift towards private sector work. The latter, especially in the Caribbean's growing service sector and in technological fields, requires broad-based education and training, including elements of management, finance and business skills. The majority of existing programs are highly specialized and opportunities to pursue studies outside the field of specialization are limited. These views are confirmed in the UWI review (Loubser *et al.*, 1988), where it was commented that:

> Both students and employers complain that UWI does not offer a wide enough range of courses in its specialist degree programs... Lack of attention to practical dimensions was often mentioned by students and employers as limiting UWI's effectiveness in relating to the needs of the region.

Discussion with a wide range of private sector employers produced the following conclusion:

> There is a prevalent perception that UWI relates poorly to the private sector, which wishes to see a greater range of courses more closely linked to identifiable needs in the applied sciences and management training, more opportunities for updating education and specialist education.

UWI has made a considerable effort to introduce cross-disciplinary studies in recent years. For example, the Faculty of Arts and General Studies, Cave Hill offers 22 program options, Mona the same number, and St. Augustine 10. However, none of these include management or technology, only one includes economics, and only one elements of law.

7.57 Slow responsiveness to change is common in higher education in both the developed and developing world. Several factors contribute to it. The scope for cross-disciplinary work is partly limited by the early specialization of potential university entrants in the upper forms of secondary school and at the A-level stage. This may result in few students qualifying for particular advanced courses. The small size of many of the faculties and the restriction of some programs to one campus (e.g., law, engineering) is a further limitation to cross-disciplinary degree work.

7.58 Another contributor to slow responsiveness is the limited contact with the private sector. Formal mechanisms for dialogue and cooperation through industrial attachment, joint research projects, and staff exchanges are limited. UWI has taken some recent initiatives to improve the situation. Management studies departments have developed stronger links with private employers and managers-in-residence schemes are being developed. The recent restructuring of UWI to include an Office of Science and Technology and an Office of Academic Affairs (with a broad research and postgraduate studies mandate) is designed to facilitate responsiveness.

7.59 Internal institutional constraints can also slow responsiveness. University decision-making tends to be elaborate and the tenure of full-time faculty has to be dealt with in making changes. The strong dependence on government funding also tends to make higher education institutions less innovative and responsive to new markets and demands. In addition, those fields where there are shortages of skilled labor and where program expansion is required will often be the ones where university teachers are in short supply and can command higher salaries elsewhere.

7.60 UWI's Development Plan for the period 1990 to 2000, however, does address several of the issues discussed above. The enrollment target is ambitious. Whereas enrollments grew by around 3,300 during the 1980s, they are planned to increase by 6,600 during the 1990s. Of the target of 18,500 students, 2,200 will be from non-campus countries. In meeting the targets, the Plan draws attention to a major constraint--the deficiency of secondary education. Meeting targets will require that schools greatly expand output and improve educational quality. Main enrollment growth areas are foreseen in medical sciences (88 percent), engineering (84 percent), and natural sciences (36 percent) with new degree programs in fields such as crop production, biotechnology, materials science, and environmental engineering. Each campus will establish a center for management education or an institute of business.

7.61 Both physical and staff shortages plus the need to develop economies of scale are identified by the University as reasons for developing alternative education delivery technologies, including the production of teaching materials to be used both on and off campus.

7.62 The needs of non-campus students and the national tertiary level institutions receive some emphasis in the Plan. A main element is the proposed establishment of a more coherent institutional structure within the University to integrate the several on-going activities such as Challenge and University of Wesst Indies Distance Teaching Experiment (UWIDITE) that serve these needs. The Plan proposes to extend provision of sub-degree and pre- and paraprofessional programs in areas of particular interest to non-campus countries and to strengthen national colleges to deliver these and first-year University programs.

C. Resources and their Use

7.63 This section focuses on the level and determinants of unit cost. Since Caribbean students follow various forms of higher education both within the Region and overseas, a comparison of unit costs per student year for various locations and for different delivery mechanisms is included. Some organizational issues, including the universities' relationship with feeder institutions and examination reform, which have been touched on elsewhere, are also reviewed. The financing system of higher education, outlined earlier in relation to access policies, is further discussed.

Unit Costs of Higher Education

7.64 As outlined in Appendix Table A-31, the unit costs per student year at UWI range between US$4,350 and US$29,500 depending on the campus and course of study; at UG the average unit cost is US$2,431. UWI's costs are high compared to the mid 1980 averages for other developing Regions: Africa (US$3,655), Asia (US$1,045), Latin America (US$1,500), though they are more in line with the average for Nigerian universities of US$5600 in 1986/87. The high cost faculties and campuses (e.g., clinical medicine at Cave Hill US$29,500) are roughly comparable with costs for Caribbean students studying in North America and Britain. For Jamaica, the cost to government of a university place is 51 times that of a primary school place, for Trinidad 18 times, and Guyana 33 times. The average figure for African countries is 83. The lower ratios for Caribbean countries are due to the higher costs of primary education. Many Caribbean countries, especially the non-campus countries, are expanding their tertiary institutions. As Table A-45 illustrates, the cost of a university place is roughly between two and seven times that of a place in tertiary institutions. For the non-campus countries, this cost ratio ranges between 3.6 (The Bahamas) to 6.2 (Belize); for the NCCs the median ratio is 5.3.

7.65 Table A-45 presents higher education unit costs as a multiple of GNP. A median figure for the English-speaking Caribbean is 3.5. This is four times greater than for Latin American countries and three times that of Asian countries. The Caribbean figures are averages of economic costs at UWI and unit costs at UG. The costs vary substantially across faculties, with the science-based programs being roughly 1½ times more expensive than the arts and social sciences. Only in the Sub-Saharan African countries does a university place consume a greater share of national resources than in the English-speaking Caribbean.

7.66 The costs of part-time study are substantially less than full-time. For example, UWI Cave Hill campus charges roughly 50 percent of full-time costs for part-time study, and in Trinidad, the part-time economic costs are 67 percent of the full-time costs. The use of the UWIDITE system further reduces these costs dramatically. Lalor and Marrett (1986) estimate that the unit cost for the UWI Certificate of Education courses off-campus is roughly US$1,000 compared to US$4,930 on campus. If boarding costs are included, the latter figure rises to nearly US$8,000. For the Challenge program, Lalor and Marrett estimate a unit cost of US$800 compared to US$4,350 on campus. In broad terms, the cost of a full-time place is five times that of UWIDITE study and if boarding is included (necessary for NCC students), it increases to 8-10 times. While the UWIDITE costs are only rough estimates, they are indicative of substantial potential savings by the use of distance education. The lower costs, of course, then have to be placed against the lower pass rates discussed above.

7.67 High unit costs are affecting access to higher education and it is therefore necessary to examine their determinants. Current staff/student ratios are given in Table 7.10. At the University of Guyana, it would appear that there is scope for economies in all faculties compared to developed country norms. At UWI, staffing levels appear to be on a par with European universities apart from medicine and education, where economies appear to be possible. Within the current model of teaching there does not appear to be great potential for reducing unit costs by generally increasing student/staff ratios. The rapid expansion of UWI, and to a lesser degree UG, in the 1960s and 1970s necessitated the recruitment of expatriate lecturers. Salaries were set against international market rates. To some extent, the situation still remains. At UWI in 1987/88 more than a quarter of academic staff were expatriate. The unit cost of a lecturer at Cave Hill is almost eight times the per capita GNP for Barbados. Salaries alone are roughly six times GNP per capita, compared to 2-3 times per capita for a graduate school teacher. There is little the University can do about this given the proximity to North America and the common language. Faculty are internationally mobile. The appropriate response to this situation is to ensure that they are used in the most efficient way possible.

7.68 Non-academic expenditures constituted 47 percent of total university costs at UG in 1989. At Mona in 1989, they were 59 percent of the total, at St. Augustine 64 percent, and at Cave Hill 51 percent. These Caribbean figures are similar to those of African universities. For example, the University of Khartoum spends 53 percent on non-teaching and research costs and the University of Lesotho 66 percent (Hinchliffe, 1987). A common reason for high non-teaching costs in developing country universities is the employment of large numbers of non-teaching staff. This also appears to be the case at UWI. At St. Augustine there are 2½ non-teaching staff for each university lecturer and at Cave Hill the ratio is slightly over 2. This compares to a figure of 1.6 in British Universities. Similarly, at St. Augustine there are 875 staff for 4,156 students (1988 figures), a ratio of one staff to almost five students. The comparative British figure is one staff to less than four students.

7.69 Some of the high unit costs of university study can be attributed to low utilization rates. This is partly due to the wide variety of programs offered. For example, UG offers 96 programs for 2,024 students; an average enrollment of 21. This enrollment is spread over four years of study, meaning that class size could be in the vicinity of 5 on average. Admission figures for some UWI certificate and diploma courses point to low utilization rates. For example, in 1988, four students were admitted for the health management diploma and at St. Augustine the average enrollment for new full-time certificate/diploma courses was under 10 students per course; at Cave Hill two full-time diploma courses had new enrollments of two and eight students in 1988. While some economies may be made by modular programming and consolidation of classes, these low enrollments contribute to high unit costs. Low student contact hours can also contribute to poor resource use. It was reported that the average at Cave Hill is 10 hours per week.

Table 7.10: CARIBBEAN - STUDENT/STAFF RATIOS: SELECTED INSTITUTIONS

Faculty	University of West Indies	University of Guyana	University of Suriname
Arts and General Studies	27.3	3.9	-
Social Sciences	29.7	11.3	10.7
Law	18.5	-	-
Education	12.8	8.6	-
Natural Sciences	18.8	3.2	-
Medical Sciences	5.9	6.3	5.2
Agriculture	12.4	3.6	2.8
Engineering	12.0	5.9	-
Overall	13.8	5.8	-
European Universities			
Humanities	26.0	-	-
Science	9.8	-	-
Engineering	12.8	-	-
Medicine	9.2	-	-

Note: For University of Suriname, figures for Social Science and Law are combined as are figures for Agriculture and Engineering.
Source: UWI and UG Statistics (1989); Winkler (1990).

7.70 Other factors contributing to relatively high unit costs are staff allowances and other benefits. Teaching staff receive up to 20 percent of salary as an allowance for housing costs. Other allowances such a book grants, study leaves (including family passages), and sabbaticals (one per six years of work) all add increments to the unit costs of higher education. Another factor is expenditure on travel and attendance at academic conferences. For example, at UG, this constituted 20-30 percent of non-salary expenditures in some departments.

7.71 Research has shown that expenditure on books, equipment, and other educational materials can substantially improve quality of primary and secondary education. There is no reason to suppose that this will not apply at the university level also. The proportion of the budgets spent on teaching and research material is low at UWI. The St. Augustine campus spent only 5.4 percent of its 1989 budget on educational materials; Cave Hill 6.1 percent and Mona 7.0 percent. UWI also spends small amounts on maintenance of premises and equipment. The Cave Hill figure was 3.9 percent and Mona 2.7 percent in 1989. In many developing countries the quality of university science suffers because of inadequate supplies of equipment and materials. The proportion of the UWI Faculty of Natural Science budgets spent on such items is low; at Cave Hill it was 1.3 percent, at Mona 1.7 percent, and at St. Augustine 5 percent, while non-academic staff costs constituted between one-quarter and one-third of total budgets. There appears to be considerable scope for reallocating budgets in such a way as to have more direct impact on quality improvements. The situation is particularly depressing at UG. In 1989, the Faculty of Natural Sciences spent only US$400 on equipment and materials, amounting to less than US$2 per student. According to 1989 UG expenditure figures, four faculties (education, agriculture, technology, and health science) spent no money on research activity. The quality and effectiveness of research and teaching must be adversely affected under these circumstances.

7.72 In general, increased financial constraints have undermined the maintenance and/or improvement of plant, staff, and other educational resources at UWI and UG. At UWI, official comments during the 1988 institutional review pointed to:

> . . . shortages of buildings, equipment, supplies, books and materials to support on-going programs; . . . almost total absence of research fellows; [and] . . .difficulties in staff recruitment and retention, especially in key areas such as management studies, computing and statistics (Loubser *et al.*, 1988).

At UG, the picture is even more bleak:

> . . . the school of Agriculture has not had its own building in eight years . . . existing under 'permanent' temporary status in space initially intended for other campus functions; . . . in the School of Technology there are few laboratory facilities or classrooms; . . . the run-down dilapidated condition of its (UG) laboratories stand out in the School of Natural Sciences; [and] . . . the Administration department . . . does not have the minimum physical space capacity to perform its tasks (IDB, 1985 p.15).

Relationship with Tertiary Institutions

7.73 The past 20 years has seen the growth of other tertiary institutions in both the campus and non-campus countries as a response to increased demand for post-secondary education. Especially in the NCCs, but to some extent in campus countries also, such institutions are seen as key components of national educational development, and in the smaller Caribbean countries act as the flagship of the system. In the long-term, several aspire to become mini-universities offering full bachelor degree programs. Some institutions such as CAST, the University College of Belize, and the College of The Bahamas already do so, and several others such as the Grenada National College, Sir Arthur Lewis Community College, St. Lucia and Barbados Community College have developed two-year associate degree programs or are in the process of doing so.

7.74 These developments have had a significant impact on the relationship between UWI and the tertiary institutions and their national governments. First, NCC governments in particular assign high priority to financing their national institutions and this, to some extent, has contributed to a reduction in the funding of NCC students to UWI. Second, because of strong NCC family ties in the US, many institutions increasingly look towards linkages with North American colleges. In essence, many of the NCCs now regard UWI as only one of their higher education options--albeit the preferred one. These political and educational pressures have shifted the relationship between UWI and its potential feeder institutions from dependency to cooperation and mutual service.

7.75 These political pressures, combined with the escalating cost of campus study, are increasing the demand for UWI outreach activity. In the short term, UWI is likely to respond in two ways. First, by decentralizing delivery of its own programs through the expansion of the Challenge system and UWIDITE organized through the centers of the School of Continuing Education in each territory. Second, by providing advice and assistance to tertiary institutions in the planning and design of indigenous programs to facilitate effective articulation and accreditation of national programs with its own. In the longer term, the balance is likely to shift away from direct delivery to articulation/accreditation activity as national tertiary institutions enhance their capability to deliver degree-credit programs.

7.76 A key objective of this growing relationship between UWI and tertiary institutions should be the rationalization of program equivalencies and certification. UWI can play an important leadership role in this area. The 1990 restructuring of the University Center, including the establishment of the Offices of Outreach and Institutional Relations and Academic Affairs plus the recent formation of the Association of Tertiary Level Institutions (ATLI) are steps in this direction. As Parker (1988) points out, the Offices of University Services are also playing an increasingly effective role in facilitating stronger links between UWI facilities and tertiary institutions. Nevertheless, these programming issues are complex and UWI may need to strengthen its technical capacity if these functions are to be undertaken effectively.

7.77 The increased harmonization of certification and program equivalencies will also assist in informing the most cost-effective organization of course delivery. Despite some recent improvements there continues to be overlap and duplication of resources between some UWI preliminary courses, certificates and diploma programs, and various paraprofessional and associate degree programs. In some instances, it might prove more cost-effective for UWI to completely devolve delivery to other tertiary institutions (e.g., N1/N2 science programs) and simply provide quality control. More likely, UWI will be asked to provide accreditation of national programs. A key area is the articulation of paraprofessional programs with degree courses. The limited progression at present is a fundamental factor in the tendency of many students to take the overseas route for university education and training.

Diversifying Higher Education Finance

7.78 Over the last decade, UWI's and UG's operational costs have been funded by contributing governments and scholarship income from donor agencies. Development costs have also been shared between governments and external donors. There is a heavy dependence on these two sources. In 1989, Cave Hill estimated that 8.3 percent of its recurrent budget was earned income and St. Augustine 9.5 percent. This income itself consists mainly of tuition fees and other services directly funded by governments. In 1988/89, the Barbados Government contributed US$13.1 million for higher education (including overseas training), mostly to cover Cave Hill's budget of US$12 million. At UG, in 1988/89, the government grant represented 96.6 percent of total income for recurrent expenditure.

7.79 With regard to capital expenditure, between 1976/77 and 1985/86, roughly two-thirds of UWI development expenditure (research, development, capital) came from donor agencies and most of the remainder from governments. At UG in

1989, roughly 80 percent of capital expenditure came from government or foreign agencies. Development is becoming increasingly reliant on donor agencies. The overall picture for UWI is summarized in Table 7.11 for the period 1976/77 to 1985/86. For both operational and development costs, local private sector financing is negligible. For example, between 1982/83 and 1985/86, Barbados' private-sector sources contributed roughly US$60,000 out of a total budget of US$30-35 million for the period.

7.80 Students from the campus countries are essentially funded by governments and from the NCCs by a combination of governments and donor agencies. Nevertheless, private contributions, mainly for boarding (around one-third of total costs), are significant. The introduction of CESS in Trinidad and Jamaica as a contribution to economic cost has pushed private contributions even higher for some campuses and faculties. Where student loan schemes have been introduced, they have had mixed success. For example, in Jamaica repayments are low and the CDB schemes have some limitations in financing and targeting arrangements. In the current climate of constraints on government finance, there is a need to examine possibilities for further diversification of financing. These include expansion of student loan schemes, private employer financing, private contributions, and other income-generating schemes, such as the sale of university services. These issues are discussed in greater detail below.

Table 7.11: CARIBBEAN - SOURCES OF FINANCE, UWI: 1976-85 (percentages)

Category of Cost	Regional Sources a/	External Sources b/	Total
Operational Costs (including scholarships other income)	79	1	80
Development Costs	8	12	20
Total	87	13	100

a/ "Regional" refers to government contributions, including donor funded scholarships.
b/ "External" refers to foreign agencies, including donor grants for new buildings.

Source: Loubser *et al.*, 1989.

Institutional Autonomy

7.81 The heavy dependence on uncertain government and external donor financing tends to make universities less innovative, complicate forward planning, and restrict quality improvements. This is acknowledged by the institutions themselves, as illustrated by UWI responses during the 1988 institutional review:

> . . . in the absence of growth of resources there has been a tendency to keep things as they are; consequently UWI has not been sufficiently innovative or adventurous; perhaps there has been a tendency toregression; . . . forward planning is difficult when there is uncertainty about the availability of continuous funding at a level required to sustain essential activities . . . (Loubser *et al.*, 1988).

Despite a high degree of operational autonomy, UWI is essentially a public institution. Budgets require the approval of governments, and while this persists, the incentive to raise additional revenues is undermined because of fear that revenue-earning could result in cuts in government funding.

D. Quality, Access and Efficiency

Improving and Assuring Quality and Effectiveness

7.82 Higher education is characterized by its long gestation period, which makes the match between output and changing national social and economic demands problematic. Universities and participating governments need to give serious consideration to policies that ensure undergraduate programs are responsive to changing economic needs. A central objective should be to expand part-time and in-service programs for the work force. To achieve more flexibility in programming, and increase the marketability of graduates, first-degree programs could be increasingly modularized and competence-based. Recent adoption of the semester system could help in this way. Complementary to this, the availability of degree programs planned in conjunction with employers and partially funded by them could be increased. Universities do not always have the necessary expertise for what is a complex process and planning exercise. External assistance through links with higher education institutions experienced in this field may be required. If this policy to broaden the undergraduate programs is adopted, governments will need to examine carefully the impact of existing A-level programs, or a possible Caribbean-specific substitute.

7.83 A central objective should be the development of indigenous programs that respond to the needs of the growing service sector and allow progression from paraprofessional diplomas to professional degree courses. One option might be to establish CAST as a regional polytechnic and broaden its degree charter. Another option is to strengthen national polytechnics and community college capacity to provide such programs, possibly in cooperation with the universities and CAST. A third option is to continue to rely on foreign institutions for much of this education and training. The CAST option could limit responsiveness to national needs and raise training costs for non-nationals. The community college/university partnership would necessitate resolution of at least partially different missions. The third option contributes to high costs and the brain drain overseas. Nevertheless, in the short term, governments may wish to pursue these options as partial solutions.

7.84 In the medium to long term, a more flexible and responsive option could be to institute a regional accreditation body along the lines of voluntary accreditation associations in the United States or the United Kingdom Council for National Academic Awards, with a mandate to assist national institutions in setting standards and monitoring the quality of national diploma, degree, and postgraduate level programs. To be effective, the body would require a high degree of independence and autonomy as well as broad-based governance (including public and private sector employers) and guarantees of adequate financing.

7.85 To reduce levels of repetition and dropout, a key step will be to ensure effective articulation between programs delivered off-campus and those on-campus. Another measure might be to review regulations governing promotion and graduation to see whether they can be eased without unduly affecting graduate quality. Additional remedial help could be built into undergraduate programs as a permanent feature combined with student counselling.

7.86 Institutions will need to take steps to secure financing for the non-salary inputs vital for quality improvements. This may require economies elsewhere to ensure adequate supplies of library books, equipment, periodicals and scientific journals, which research has shown are key factors in quality gains. Laboratories and workshops need secure financing of consumables and materials to maintain and repair equipment.

7.87 Another key area is to revitalize staff development programs so as to upgrade the qualifications and experience of university teachers. Much post-graduate work is still being done outside the Region, often with donor support. Governments and donors should seriously consider policies that redirect this funding towards improving the capacity of the Regional institutions. Strategies could include increasing twinning arrangements with foreign universities, collaborative research, and staff exchanges. These activities exist but sometimes tend to be underdeveloped and not sustained over long periods. The quality of research and postgraduate programs might be enhanced by some consolidation of present resources to develop centers of specialization and excellence. The establishment of the UWI/UG Consortium Graduate School of Social Sciences is a move in this direction. A similar institution for science and technology might usefully include links with CARIRI, CARDI and other science-based research institutes to achieve a critical mass of staff and resources. An effective link with appropriate foreign institutions could enhance its development.

7.88 Governments also need to consider policies and strategies that strengthen the monitoring of quality in universities and colleges. The proposed regional accreditation body could play a key role in providing independent assessment of standards and performance. Regional employers bodies and industrial councils such as the Caribbean Association for Industry and Commerce (CAIAC) should be actively involved in the process.

Increasing Efficiency

7.89 A fundamental policy objective should be to review the efficiency and effectiveness of existing academic structures and programming, including the role of A-level, and the relative effectiveness of associate degrees, three- and four-year degree programs. Any review would need to be supported by research into the performance of undergraduates entering with various levels of qualification, correlation of entry points with degree performance, relative dropout and repetition rates, and job performance on graduation.

7.90 Another challenge for policymakers is to implement policies to reduce the unit costs of higher and tertiary education. The earlier analysis suggests there is some scope for savings. One measure would be to increase the numbers of students for each academic staff member in some faculties and to finance departments against agreed staffing norms with appropriate budget cuts and incentives based on enrollment trends. Alternatively, minimum standards for class and course size could be established with discontinuation if these standards are not met. There appears to be some scope for reducing the ratio of non-academic support staff to academic staff and students. The use of student labor on campus could facilitate this measure, and, simultaneously, remove one of the incentives for students to go overseas. Paid labor or payments-in-kind could also finance the studies of low-income students.

7.91 Resource utilization rates vary between institutions and faculty. There is scope for better scheduling and sharing of some facilities; staff could be used in different faculties, especially if a more multi-disciplinary approach develops. On a broader front, a three-semester system would reduce down-time of plant and staff. This could have a major impact on increasing enrollments and reducing unit costs.

7.92 The UWIDITE and Challenge programs have demonstrated that extramural programs have the capacity to reduce unit costs dramatically. The present institutional delivery system and the media used still place some limitations on access, especially in rural areas. The institutions used need to be diversified to include tertiary institutions, schools, and community centers combined with greater use of printed material, self-study packs, radio broadcasts, and audio-cassettes. There is also considerable scope for CAST to develop an outreach program for paraprofessional and degree programs to complement those of the Regional universities. To strengthen communication and delivery, one possible measure could be to establish a center for distance higher education in the OECS offering UWI, CAST, and other appropriate programs extramurally. To increase effectiveness, the center and periphery's capacity to design and deliver extramural programs could be strengthened by staff development programs for distance education tutors, improved capacity to design and deliver effective learning materials (especially print), and a system of peripatetic tutors and regular summer schools. In broad terms, the development of a sustainable extramural program is the key to improvements in efficiency, access, and output from higher education.

7.93 The practice of subsidizing students to pursue first degree and graduate studies in foreign universities is expensive. Unit costs remain significantly higher than those at Regional institutions. This practice reduces the quality of intake into Regional universities and increases the tendency to remain overseas for further study and work. The feasibility of eliminating this practice will depend partly on the responsiveness of the Regional institutions and governments to broaden their range of programs.

7.94 If budget cuts deepen and economic and social demand for higher education rises, more radical approaches will be needed to encourage greater efficiency and unit-cost reductions. One immediate option is to review the general policy of nationals from the UWI campus-countries attending their home campus and NCC students being directed towards Cave Hill. Provided quality is assured, there is no compelling educational case to prevent students and governments from pursuing the least-cost option. This would involve encouraging competition between the three UWI campuses, UG, CAST, foreign universities, plus other alternatives. In a sense, the number of privately financed students going overseas is in part already a manifestation of this competition. If, greater cost-sharing is introduced, parents and students are likely in any case to demand the right to select the most cost-effective options.

Targeted Expansion of Access and Output

7.95 To achieve gradual expansion of access to and output from higher education, policymakers will need to set themselves realistic targets that take account of the educational, political, and financial realities. A medium-term objective could be to decentralize delivery of all but the final two years of undergraduate programs to tertiary institutions. The UWI Challenge social science programs are useful models for extension into other disciplines. Two-year CAST paraprofessional programs linked to their new degree courses could be developed in the same way. Various models for decentralization are available. One is for tertiary institutions to become associate colleges of appropriate higher education institutions. Another is to arrange for tertiary institutions to deliver university programs. Yet another is to arrange two-year credits and exemptions for national programs. National governments will have to select the best mixture of approaches.

7.96 Involving tertiary institutions in the delivery of undergraduate programs would have several benefits. First, it would reduce the overall costs of a full degree program; second, it would release places on campus to reduce the bottleneck for the increased numbers pressing for places; and third, it would release staff and other resources to assist in the strengthening of outreach activities in the constituent countries. A related objective would be to ensure that outreach students progress to the final two years of undergraduate programs. One measure will be to secure efficient articulation. A second, presently a bottleneck for Challenge students for instance, is to secure financing through a mixture of grants, scholarships, and loans.

7.97 To sustain any decentralization effort, careful consideration will have to be given to staff development requirements. Staff access to part-time training programs, courses in institutional management, and seminars on curriculum design and assessment techniques will be required. In the absence of these initiatives, the decentralization process could be undermined.

Expanded Cost-Sharing by Beneficiaries

7.98 The need to improve levels of access and quality in higher education has been argued above. To recapapitulate, total registrations at UWI in 1988/89 were 11,900. The target set for the year 2000 is 18,500. It is unlikely that the additional costs can be met completely by savings emanating from measures to reduce unit costs. Nor is it likely, at least in the short to medium term, that governments will be in a position to provide additional funding for the subsector. To effect the necessary access and quality improvements proposed, it is imperative that governments adopt policies to recover increased amounts of the costs of higher education and simultaneously produce greater equity in the element of cost-sharing that already exist. It is evident that the present economic cost system and the failure to separate government contributions to the university from those to students has contributed to inequalities in access between countries, inequalities in the levels of government and donor subsidies for students' higher education.

7.99 Governments may wish to give serious consideration to policies and measures that require private-sector employers as well as workers themselves to share a greater proportion of the costs. Targeting the private sector is justified as the balance of graduate employment shifts towards it. One measure is to expand private sector funded scholarship programs, organized through local Chambers of Commerce and manufacturer's association or direct sponsorship of their own workers. Another measure could be to introduce a payroll levy or tax targeted at higher education financing. Another possibility is an employer tax for each graduate employed. The revolving fund generated could be managed by a local employers federation to facilitate effective targeting assistance.

7.100 A complementary approach would be to increase the level of user fees charged to students together with the introduction of (or strengthening of existing) loan schemes. Indeed, a recent University report on fees and financing (UWI, 1991) suggests that fees should be levied at 10 percent of economic cost for 1992/93 and at 15 percent for the period 1993/94 to 1995/96. The general arguments favoring increased student contributions are based on considerations of efficiency and equity. The efficiency considerations are threefold. First, increasing students' contribution to the cost of study would improve their motivation and commitment to study, resulting in reductions in drop-out, repetition and failure rates. Second, increasing the students' contribution to the costs of tuition and/or other living expenses would make them more careful in choosing their educational options and more sensitive to the labor market. Third, reducing public financing of higher education would allow more resources to be directed at primary and secondary education, where, it is argued, the gains to society are greater. In terms of equity, the main argument is essentially that university education leads to higher earnings and those who benefit should pay. Anecdotal evidence for the English-speaking Caribbean suggests that white collar workers' children are overrepresented, and that they are reaping the benefits of subsidies, or already have done so at secondary and tertiary levels.

7.101 There is a limited factual basis to support the efficiency arguments. Provided they have access to funding and the admission requirements, students already tend to opt for courses that lead to better paid jobs. Nevertheless, loan schemes could be designed using concessionary terms to attract students to fields for which there is strong private and/or public sector demand. In this way, it could make the match between supply and demand for workers more efficient. The equity arguments appear to be much stronger. In the Caribbean context, a comprehensive loan scheme could reduce inequalities in access that arise out of governments' varying levels of financial support for higher education, notably the campus countries/NCC divide. It could also reduce the variation in levels of subsidies that arise from UWI's pricing policies for different campuses and faculties. Nevertheless, based on limited evidence from the Jamaica scheme, a loan operation alone might still disadvantage students from low-income families afraid to take the risk. One solution could be to supplement the loan scheme with a donor or government-financed, income-related scholarship program. This could provide more effective targeting for donor-financed scholarships schemes, especially in the NCCs.

7.102 In the Caribbean, where many students go overseas for study and emigrate, the design of loan schemes presents problems. If the student stays off-shore, it may be difficult to recoup the loan finance or alternatively to find financial guarantors to make the scheme operate effectively. The budgetary effect could be negative. One approach might be to limit the scheme to study in the Region, combined with a bonding policy that requires government and community service at low pay on completion of study. Another option could be to introduce a payments-in-kind system by employing students part-time at the university. The SISTREN group in Jamaica has already raised this possibility (Loubser *et al.*, 1988). This could have the effect of reducing the financial cost to students and containing the units costs of higher education by adjustments to the levels of non-academic staff. The possibilities of part-time work have been identified as a major factor in students' decision to study overseas, and this kind of system might help reduce the brain-drain.

7.103 There is a range of possibilities for increasing contributions from private employers. Large firms such as breweries, mining, and agriculture companies and finance houses could sponsor students and fund the faculties from which they recruit graduates. Finance could be generated through a form of graduate-bearing tax. If, as proposed, "sandwich" courses were introduced, firms could be asked to pay the student salaries during attachment. Indirect contributions could be raised by staff exchanges with firms covering salaries and/or providing part-time academic staff and making specialist equipment available for on-site work by students and academic staff. Building and engineering firms could provide labor and materials for the maintenance of university buildings. In practice, examples are few.

7.104 Income-generation through the sale of university services remains limited. At UWI some faculty members provide consulting advice but the procedures are insufficiently institutionalized. One difficulty is that there is a tacit assumption, because of the governments' financing of UWI, that the university will provide consulting advice as a free service. Most paid work is undertaken for foreign agencies. UWI is mobilizing income generation by renting facilities during vacation periods; the new three-semester system will facilitate this. In general, there is considerable scope for institutionalizing mechanisms to generate additional revenues. This could include increased institutionalization of the sale of consultancy and advisory services, the contracting of public and private sector training, both regional and foreign, and the leasing of university space during the vacation period.

7.105 Donor agencies, in consultation with governments, may wish to review their scholarships and training policies. To encourage decentralization of higher education, greater priority could be given to support in-country higher education, especially in the NCCs. Donor finance could be used to expand loan schemes rather than provide grants, taking into account lessons learned from Student Loan Program Evaluations (see Box 5). Increased targeting on successful "outreach" students who wish to proceed to on-campus study deserves serious consideration. Donor assistance could be specifically targeted to students from low-income families through highly concessionary loans and income-contingent subsidies. Policies to direct students towards Regional rather than foreign institutions, especially at diploma and first-degree level, might be more strictly enforced by governments and donors.

Box 6 - LESSONS LEARNED FROM STUDENT LOAN PROGRAM EVALUATIONS

- Financing To improve effectiveness, programs should be targeted toward the most needy and able students. Hidden subsidies should be limited by charging positive real interest rates, combined with repayment plans that more closely approximate the age-earnings profiles of higher education graduates. Default contingencies must be enforced to encourage repayment.

- Administration Administrative procedures need to be reformed so that executing agencies share with governments the risk of default. Positive incentives which reward loan administrators for loan collection should also be put in place. Student loan program administrative costs remain high in Latin America; these could be reduced through increased automation of procedures. On the other hand, counseling of loan beneficiaries as to their responsibilities should be increased, and record keeping on borrowers' addresses and place of employment must be improved, which means program administrators need to make frequent contact with borrowers, especially in the first year after graduation.

- Access While poor students often experience greater difficulty in obtaining loans because of the lack of collateral and/or guarantors, the primary obstacles to access among the poor remain poor educational opportunities at lower levels and the total private costs of higher education (especially foregone earnings). In cases where loan security measures are the access constraint, it may be preferable to award scholarships to needy students who demonstrate academic promise rather than offer unsecured loans.

- Cost Recovery Because of the likely necessity of maintaining some subsidization of interest rates and the need for longer repayment periods (to ensure affordable loan payment schedules), loan program cost recovery (in net present value terms) is likely to range between 40 and 75 percent. Assessment of the potential for public expenditure shifts from higher education to lower levels through loan programs and user charges should take this into account.

- Tuition Fees/Loan Amounts Based on an analysis of ability to pay fees and repay loans among higher education graduates in Latin America and the Caribbean, tuition fees equal to at least 25 percent of unit costs are reasonable and affordable, when accompanied by loan programs for students who need them.

- Political Factors Expanding loan programs in order to help finance increased higher education fees must overcome strong political opposition, which implies: dialogue with higher education administrators, professors and students; negotiation of fee revenue sharing arrangements between the government, higher education institutions and lower education levels; provision of scholarships to poor students with academic merit who may be risk-averse to debt; and mobilization of basic education teachers whose working conditions stand to improve with public expenditure shifts from higher education to lower levels.

E. Policy and Investment Options

7.106 UWI's Development Plan focuses on several of the issues raised above. The proposed policy and investment options below reflect some of the considerations in the Plan and in part place additional elements on the agenda. They propose that the UWI undertake to:

1. Consider developing more modular, sandwich and part-time programs to improve levels of access, particularly in those areas that respond to the growing service sector and that allow progression from paraprofessional diplomas to professional degree programs.

2. Possibly extend the Challenge social science program to other subjects and to longer time periods, expanding distance education facilities and establishing a specific center for distance higher education in the OECS for UWI, CAST, and for other appropriate programs.

3. Carefully assess the effectiveness and efficiency of the A-level entry requirement and, if retained as is, its ultimate replacement by a comprehensive course of study.

4. Review the benefits of minimum class sizes, reduction of the ratio of non-academic staff to faculty and students, and development of more self-instructional materials.

5. Review, where relevant, the subsidization of students to study under- and graduate-degree programs in overseas universities; and, while economic costs vary so widely among campuses, consider a general policy of nationals from the UWI campus countries attending their local campus and non-campus country students being directed to Cave Hill.

6. Further review the UWI financing system, which is believed to be contributing to inequalities in access between countries and in the levels of government and donor subsidies between students.

7. Consider the introduction of Education-related taxes levied on firms to help finance higher Education, together with a restructuring of tuition fees and student scholarship and loan schemes. Donor scholarship programs could be oriented to encourage that initial year(s) of a degree be taken in-country with the final year(s) campus-based.

CHAPTER VIII

MANAGING RESOURCES

8.1 Previous chapters have pointed to a slowing of enrollment growth, especially in tertiary and higher education, and low quality at several levels of Caribbean education systems. While the pattern of enrollment growth is partially due to demographic and spatial factors, the previous chapters have also highlighted underutilization of plant and staffing resources and fragmented and often inconsistent management and organization of education and training systems. As the goals and objectives of national systems have evolved and the demand for increased provision intensified, the management and organizational infrastructure has sometimes been slow to respond. As a result, even when governments recognize that policy changes are required, there is insufficient capacity to formulate, plan, implement and monitor the required changes and in some instances to effectively manage the present level of education services. Several factors contribute to the present situation. First, the small scale of many of the Caribbean systems places limitations on the levels of financial and manpower resources that can be invested in managing the system. Second, as was highlighted in Chapter III, small management systems mean that many senior officials have multifunctional roles that can distract from pressing policy, planning and implementation matters. Many of the smaller systems are highly personalized and politicized, which makes them difficult to adapt into more modern forms of management and organization.

8.2 This chapter aims to stimulate discussion about several aspects of education management and provides a wide assortment of proposals. The first part analyses the existing management and organization of national education systems, highlighting some examples of good practice within the Region. The possibilities for more effective use of resources are suggested through reforms in management structures, increased decentralization of responsibilities and services, and strengthening key units in central ministries through consolidation, training, and targeted technical assistance. In the second part, the role played by Regional institutions in assisting national governments with management reform, institutional development, and training is examined, and some possible models for improvement presented. Finally, the effectiveness of donor agencies is discussed drawing on examples of past, present, and proposed assistance and ways suggested for improving government and donor cooperation, along with coordination of assistance among funding agencies.

A. Managing National Systems

8.3 There are four main determinants of the effectiveness of resource management at the national level. First is the structure of the management and organization system itself. Second is the efficiency with which the system provides information. A third determinant is the capacity within ministries to analyze information, evaluate options, and inform policymakers and managers of policy and planning choices. Underpinning each of these is the quality of managers themselves and the opportunities for and effectiveness of management training programs. Cross-cutting these determinants is the effectiveness of communication systems between the schools, central ministries and other agencies.

Improving the Organizational Structure

8.4 Caribbean education systems are characterized by highly centralized management structures. Resources are controlled at the center along with responsibility for policy, planning, curriculum development, materials production, maintenance of facilities and the recruitment and appointment of staff. Within the headquarters itself, decisionmaking also tends to be very centralized. The consequences of the present structure are threefold. First, senior managers, especially in the smaller countries, find themselves overwhelmed by the multiplicity of functions, which can detract from their professional work. Second, especially in those countries with far-flung communities (e.g., Jamaica, Belize, Guyana) communication systems are not always reliable, roads are not always serviceable, transportation costs are becoming prohibitive and the limited number of supervisors cannot visit all schools regularly. This results in the flow of resources (books, equipment, other supplies), information, and supervisory assistance often being erratic. Third, centralization limits opportunities and incentives for institutions to take initiatives in response to the demands of the local communities and to attract additional resources outside ministry budgets. The uncertain flow of information and decisions can lead schools to feel isolated and sometimes alienated from both the local community and the central ministry.

8.5 This discussion cannot completely capture the diversity of management and organizational structures, and their attendant strengths and weaknesses, across the region. Many of the issues are complex and interrelated, and factors such as social attitudes, available manpower, and scale will determine the most effective organization for a particular country. However, two main issues will be highlighted: rationalization of central ministry operations and selective decentralization.

Rationalizing Central Ministry Operations

8.6 As a first step towards rationalizing responsibilities, the functions that should be retained by central ministries should be considered. In broad terms, in the interest of effectiveness and efficiency, central authorities should retain responsibility for policy and planning, curriculum development and material production, measurement and evaluation, staff development, and the overall monitoring of the system. There appears to be some scope for decentralizing or privatizing other responsibilities, such as staff recruitment, supervision of the payroll, procurement, and maintenance services. This would simplify the organization and allow central ministries to concentrate on more policy-oriented issues. Possible options and models will be outlined later.

8.7 A key objective of any organizational reform should be to strengthen the capacity of ministries to develop appropriate curricula and norm-referenced tests of standards across all grades and abilities in primary and secondary schools. Existing capacity tends to be primary school-oriented and focuses on the sitting for and administration of the common entrance examination. Expertise for addressing the needs of lower- and middle- ability bands, especially at secondary level, is limited. One option might be to consolidate curriculum and testing units to provide economies of scale by appointing more secondary specialists. Another option could be a system of temporary assignments of specialist teachers, and another the constitution of specialist task forces, with part-time membership, as required. This approach has been adopted in Barbados and Jamaica.

8.8 A second objective is to strengthen the administrative capacity to develop low-cost educational materials, possibly textbooks but especially supplementary learning and testing materials. Several approaches exist. One is to establish a consolidated unit responsible for curriculum development, research and testing, and materials production--in the National Centre for Research and Development in Guyana. The Curriculum and Materials Development Unit, St. Lucia and the Curriculum Development Unit, Belize represent less extensive consolidation efforts, while the subcontracting of the final production of materials to local printers was done in St. Kitts-Nevis, Dominica and Jamaica.

8.9 There is a need to consider the most efficient methods for monitoring school performance (see Chapter V). Monitoring can be partially achieved through regular information on examination results and national grade-referenced standards, but more diagnostic and qualitative approaches are also useful. The traditional mechanism tends to be visits by education officers with supervisory responsibility for primary and secondary schools. There is some evidence that this approach can deteriorate into a routine administrative function: checking teacher and pupil attendance, delivering supplies, and implementing dress codes. A more professional management focus can be achieved through a system of whole- school-reviews. St. Lucia is currently adopting this approach.

8.10 Improved professional staff development should be another policy concern for senior managers, including themselves. Arrangements tend to be ad hoc and responsibilities fragmented between the education ministry, public service ministries, and prime ministers' offices. An approach adopted in Grenada is to appoint a ministry training officer. Another is to establish a professional development unit, which is being considered in Jamaica.

8.11 Another key policy issue is the effective management of the teaching force. The various responsibilities for appointment, discipline, conditions of service, dismissal, supervision and in-service training are presently shared, in various ways, between school principals, central headquarters staff, and public service ministries. In some instances, the roles of all those involved can become overlapping, confusing, and sometimes conflicting, causing delays in decision-making. There is scope for decentralization of more responsibility to the schools using clear guidelines that maintain public accountability.

Selective Decentralization

8.12 The potential for decentralizing many of the functions and responsibilities now in central ministries should be seriously considered. Within this framework, the first objective should be to contribute to more efficient management of services at lower levels and increase their potential for responding to their constituencies, seeking additional revenue-earning opportunities and mobilizing community support. The second objective should be to release senior officials of the burdensome, time-consuming administrative duties to allow time for policy and planning matters. The benefits of decentralization will inevitably vary from country to country according to the geographical distribution of the population, the nature of the institutions, and the efficiency of local communication systems. The discussion below suggests some possibilities, drawing on decentralization models already in place in the Region.

8.13 One way of pursuing decentralization is to grant increased autonomy to institutions at lower levels in the government system. In countries with scattered populations, this could mean strengthening of Regional and remote education offices: Guyana, Jamaica, and Belize are adopting this approach. There may also be scope for this model in Trinidad and some of the Windward Islands. In the smaller countries, more responsibilities could be devolved to the school level. To be effective, this would require special designation in education budgets. There is some scope for selective devolution of responsibility for staff recruitment, payroll supervision, procurement of supplies, and plant maintenance. An effective model is Barbados, which has established school boards of management with responsibility for many of these functions.

8.14 Another way of encouraging decentralization is to strengthen partnerships between public and private training institutions and allow public institutions to pursue more revenue-earning initiatives. For example, in Belize the government supports private and semi-private schools, which are managed directly by the churches and other community groups. Another approach is to encourage local communities to assume some of the responsibilities for running institutions. The SERVOL skills training program is one example; also much of pre-school education is managed in this way. Private support can be enlisted through "adopt-a-school" schemes like that recently begun in Barbados. Catalyzed by the Ministry of Tourism, this program operates on a strictly voluntary basis, and involves hotels that are members of the Barbados Hotel Association and schools within the national public school system. The program's activities include: work/study attachments for teachers and senior students; participation of "adopted schools" in educational tours and seminars, and diverse cultural and entertainment activities; marketing of school crafts and vegetable production within hotels; and hotel donations of used equipment and furniture for school programs.

8.15 There is considerable scope for this kind of approach at the post-secondary level. Governments could support skills training institutions run by private organizations and NGOs. Public tertiary institutions would benefit from more autonomy as well as elimination of restrictions on raising additional finance from private sources. Using guidelines that guarantee public accountability, governments could extend this principle to primary and secondary schools. Plant and staff in the evenings could provide extramural classes (especially for unemployed youth), run youth clubs, and offer training facilities for public and private organizations. This potential is essentially undeveloped at present.

8.16 The privatization of some educational services traditionally managed at the central level might also be examined. Schools and other institutions could be provided with their own budgets for security, maintenance, cleaning services, and transportation, and competitive tendering introduced. This may provide better value for the money and help reduce administrative staffing levels in central ministries.

8.17 Cross-country research has shown that good schools have many common characteristics. They have a clean and well-maintained physical environment, student and staff attendance is high, student promotion rates are good, expectation of high-quality achievement is maintained, students and staff receive regular in-house supervision and feedback on their performance, and teachers receive ample opportunity for staff development. There is general consensus that head teachers are the key to effective schooling. Yet in the Caribbean, the responsibilities associated with good schooling tend to reside in central ministries rather than at the school.

8.18 There is no compelling reason why some of these management responsibilities cannot be devolved to head teachers. Key elements would be more control over school budgets and incentives to generate local resources. There may be scope, through additional revenues earned, to reward teachers through financial incentives or subsidized training courses for good performance. Ministries might also examine the scope for allowing schools to adopt schedules and curricula, within broad national guidelines, tailored to local needs. Devolution of responsibility to the school level for managing teachers could also facilitate the introduction of new models of teacher-training. Head teachers could play a more central role in in-service teacher training through counselling and supervision of trainees. A school-based approach, presently being examined by UWI, would reduce the tendency to divorce theory from classroom practice as well as lower the high costs associated with institution-based models.

8.19 Increased decentralization of school management would also need to be associated with a clear system of public accountability. Establishment of school management boards is one mechanism. Another is regular inspections of performance from supervisors at the center. Community and private sector support for schools is more likely if evidence of efficiency is open to scrutiny. Publication of examination results and student pass rates might provide reassurances to parents. School finances could be made public and parent representatives could form part of ministry inspection teams.

Improving Management Information Systems

8.20 A key objective for policymakers should be to improve the primary school testing system. Improvements need to focus on a range of issues. One objective should be the introduction of standardized achievement tests, with clear definitions of skill specifications for various grades in the primary cycle, not just at the end of it. A second, related objective is to ensure that tests carefully match the requirements of the national curricula. Without this, there is little incentive for schools to teach the necessary skills or students to learn them. A third objective is to shift the emphasis of testing away from its use as a selection device towards monitoring the quality of student performance and diagnosing the strengths and weaknesses of the curriculum. The introduction of the National Assessment Program in Jamaica and the Tests of Primary Standards in St. Kitts and Nevis are steps in this direction.

8.21 At the secondary level, there is heavy reliance on external examinations. Testing systems need to be developed and standardized for those groups of students not covered by external examinations. A central objective should be to improve the design of national secondary school graduation examinations. The skills profile approach adopted by the CXC represents a useful model for national secondary school examinations. The profiling and certification system introduced in Montserrat for its national secondary school pre-vocational program also has considerable merit.

8.22 At present, insufficient use is made of test data for assisting performance monitoring and providing feedback for schools. Governments should consider ways of strengthening the capacity of testing units to do this. One measure would be to provide annual reports to schools on student performance and comparative data on other schools both intra-regionally and internationally. The regular distribution of the CXC newsletter and examiner reports represents a model that could be adapted to other levels in the system.

8.23 There is also a need to strengthen statistical and accounting systems. Much of the data-gathering could be delegated to intermediate administrative levels (e.g., regional officers) and schools, following a careful analysis of requirements and some initial training for those responsible. In some countries, the present system is fragmented between general education officers, accounts sections and planning units. A clear definition of responsibilities is required. There is merit in focusing the design of the system and data analysis on the planning unit, with other departments and schools responsible for collection and collation. As part of these improvements, greater emphasis could be placed on the collection and analysis of finance data to provide guidance on resource allocation policy. These approaches are now being introduced in Belize.

Strengthening Planning Capacity

8.24 Caribbean governments, with substantial assistance from donors, have over the years invested significant resources in the development of education policy and planning units. For a variety of reasons, the effectiveness of units and their potential sustainability are very uneven. One factor is the inadequate levels of operational resources for staff to develop efficient information systems and undertake research. Another factor is the ineffective location and low status of these units within the overall organizational structure. Particularly in smaller countries, planning units are often relegated to the status of statistics units, and planning specialists are expected to serve also as project implementation officers. The consequences are insufficient time for effective planning activity and limited access to the highest levels of policy-making within the education ministry and the national planning structure. Access to policymakers can be improved by constituting regular policy and planning committees, chaired by the minister (Barbados has adopted this approach).

8.25 Measures should be adopted to improve the planning process. There is a tendency for education sector planning and documentation to be perceived as an internal ministry exercise. Steps need to be taken to involve wider interests, including other government departments (e.g., finance and central planning ministries) and non-government and private sector organizations. Wider consultation would reduce some of the barriers to adoption.

8.26 Another central requirement is to increase the amount of educational research commissioned by ministries. In the Caribbean, research into the operation of the education service is sadly lacking. The availability of information on the unit costs of different levels of education and training in various types of institutions is very uneven. Data on the availability of textbooks and other educational materials, and their effects, are in short supply. Little analysis is undertaken on the use of plant, staff and student time. This kind of information is crucial in formulating policy, preparing planning options, and allocating resources. Several relatively inexpensive measures could be adopted to improve routine information flow and analysis. For example, selected teachers could be temporarily assigned to planning units to undertake specific research. Ministries could use UWI education undergraduates and postgraduates to carry out national operational research activities. Planning units could be allocated small budgets to commission operational research. Ministries could provide incentives, prizes, and scholarships to encourage head teachers and teaching staff to carry out school-based case-studies. Private firms and parent-teacher associations could offer similar incentives at school and national levels. The CARNEID regional educational "research prize" scheme is a useful model for adoption at different levels. Linked to improvements in the testing system, more research is required into levels, trends, and determinants of educational achievement. Initially, more use could be made of routine information on national, school, and student performance already provided by CXC. Caribbean countries could also draw on the research tools provided by the IEA.

8.27 A third area of research that requires strengthening is the external efficiency of the education and training system. There is little tradition in most Caribbean countries of tracing the destination of secondary school, tertiary and university graduates in the labor market, or assessing relative performance at the different educational levels in the work place. There is no compelling reason why planning units cannot commission tracer study data from heads of institutions on a routine basis.

B. Regional Cooperation

8.28 In principle, regional cooperation should provide some solutions to problems arising from scarce national resources by offering the potential for economies of scale and consolidation of resources as well as more efficient policy coordination and program management. In practice, regional institutions suffer from limited resources and uneven mandates due to the conflict between national and regional interests and the variable government commitments. The different bilateral and regional programming priorities of governments and donor agencies may also contribute to difficulties in achieving effective regional cooperation. Three major policy concerns emerge: (a) strengthening regional policy development; (b) increasing the sustainability of selected regional institutions; and (c) prioritizing areas for regional cooperation.

Strengthening Regional Policy Development

8.29 At present, mandates and responsibilities for regional policy in human resource development are fragmented. CARICOM has the broadest mandate but possesses only limited capacity for coordination and management. At the OECS subregional level, the mandate rests with the secretariat, but again in-house capacity is underdeveloped. Other regional institutions with more limited mandates are the CXC (secondary school examinations), UWI (tertiary/higher education), the CDB (student loans), and CAIC (private sector training).

8.30 A high priority for governments should be to strengthen regional policy development. One measure might be to establish a Regional human resource development (HRD) standing committee, with a high degree of autonomy and broad-based Regional and national level representation. An objective would be to ensure harmonization between Regional, subregional and national policies and programs. A second priority is to upgrade the policy development capacity of the major stakeholders. Recent attempts to strengthen the CARICOM HRD unit, the establishment of an OECS education strategy group, and the imminent appointment of an HRD adviser in CDB are welcome improvements. These efforts need to be extended to other Regional institutions and national ministries. Donor agencies can help in several ways. CIDA's assistance to the OECS policy strategy is a model as is CFTC's assistance to CARICOM's policy units. A complementary measure might be to establish a standing mechanism for Regional coordination of development assistance, involving donors and Regional and national bodies. The Project Advisory Committee established at CDB for the coordination of technical-vocational education assistance in the OECS subregion represents a model that could be adopted on a Regional and broader front.

Sustaining Selected Regional Institutions

8.31 Consideration of policies and measures that contribute to the long-term sustainability of key Regional institutions are also required. As part of this process, Regional institutions will need to strengthen national institutions and move towards a higher degree of self-financing. At present, many heavily rely on government funding and donor assistance. The latter is often episodic, while governments are finding it more difficult to meet their obligations. For example, in 1988, governments' arrears to CXC amounted to US$1,707,000, which represents nearly 28 percent of annual expenditures. This dependence, along with funding uncertainties, limits the responsiveness of Regional institutions to changing needs at both Regional and national levels. To meet their mandates, Regional institutions could benefit from policies that allow greater diversification of financing, combined with procedures that reduce unit costs while still providing, or improving, equity of access to the services of Regional institutions. The Caribbean Examination Council can be used as a case study. The broad principles proposed can be applied in other Regional institutions, including UWI, CARICOM, and the OECS secretariat.

8.32 In 1988, CXC revenues came from two main sources: government contributions (34 percent) and examination fees (62 percent); other revenue represented just over 4 percent of the total budget. Fee levels have remained at roughly US$11.00

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per subject and US$10.50 per student since 1983. In some instances governments pay examination fees; in others, the costs are borne by parents. Expenditures fall into three main categories: permanent staff salaries (29 percent), the annual marking exercise, which is highly centralized (36 percent), and printing examination papers (9 percent). The remainder covers other operational costs, including office expenses, travel, and staff benefits. Research and development represents only 0.2 percent of total expenditures.

8.33 There may be some scope for containing the unit costs of examining. The present marking process--which requires markers/examiners to cover three or four central locations--is costly in terms of travel, hotel costs, fees, and allowances. The marking process could be decentralized to allow markers to correct tests at home, with responsibility for management of the process and security delegated to local CXC registrars. CXC central staff (and chief examiners) could be responsible for monitoring accuracy, standardization, and final grading. Another benefit of such decentralization would be the increased availability of senior teachers to run and participate in national in-service teacher training programs. At present, their absence is a major constraint on these activities.

8.34 There is also considerable scope for CXC to diversify its operations and financing sources. One area would be in assisting national governments with the design and standardization of primary school testing. CXC assistance to the Trinidad Common Entrance Examination system is a useful model. Another area could be the design and testing of procedures for national secondary school examinations. CXC might also provide consultancy services for strengthening the capacity of national curriculum development units and testing and measurement services. These could include a research and development capacity to analyze the efficiency, effectiveness, and equity of its own and national examinations. Further, there may also be a role in the design, accreditation, and standardization procedures for regional and national programs at the tertiary and university level.

8.35 To diversify, CXC would need to consider revisions in its organizational structure. One option would be to institutionalize a consultancy and research and development capacity. Allied to this, CXC could make increased use of temporary staff consultants, recruited from national governments, to undertake specific tasks. These secondments could be funded by national governments as part of their contribution. More flexible staffing policies could increase the Regional representation in the organization and contribute to cost containment.

8.36 The policy options outlined for the CXC, which are in various ways applicable to other Regional institutions, would represent substantial changes in the way Regional cooperation and institutions operate. Managers in Regional institutions and national ones need incentives to monitor and improve efficiency, look for cost savings, and mobilize private resources. An important incentive would be to ensure that additional resources and savings are reinvested in the Regional institution or its national counterpart.

Priorities for Regional Cooperation

8.37 The coordination of policy and planning has been already discussed in detail. Key objectives are to strengthen the capacity of CARISEC, the OECS secretariat, and to coordinate policy and planning at Regional, subregional and national levels, linked to strengthened program management capacity at the national level. These policymaking bodies will need to draw on the capacity of the Regional institutions, the regional universities, CXC, and private sector organizations.

8.38 Another objective for policymakers must be to assure parents, students, employers, and further education institutions of the maintenance of educational standards at all levels. CXC is successfully fulfilling this function for a limited range of secondary school students. Regional cooperation is now required at the post-secondary (tertiary) level. One option is for CXC to provide standardized certification across the Region. Another option, which may provide more responsiveness to national programming needs, is for governments to cooperate with major stakeholders such as the two Regional universities, national tertiary institutions, and public and private sector employers in the establishment of a regional accreditation body akin to the US regional accreditation associations and the UK's Council for National Academic Awards (CNAA). At the primary school level, the key objective is to establish age/grade-referenced norms of student performance consistent with national curricula and aspirations. Over time these might be extended upwards across the full ability range in secondary schools.

8.39 Distance education could provide an efficient mechanism for expanding secondary, and especially tertiary and higher education. To be successful, it would need to be underpinned by quality control systems (examination, accreditation) outlined in the previous paragraphs. A priority for regional cooperation is to support the UWI central university to provide the necessary technology, curriculum materials, and linked accreditation through the network of outreach centers and tertiary institutions, especially in non-campus countries. At the subregional level, OECS governments could consider cooperating in the development of a distance teaching center delivering UWI, CAST, and other institutions' programs. As part of this cooperative venture, Regional governments could draw on the services of the Commonwealth of Learning (COL) to provide correspondence materials and technical support. The technology, plant, and other resources could be used to develop and deliver programs for the secondary school level, literacy improvements, and non-formal education and training. COL is already assisting the University of Guyana in strengthening outreach provision, which may provide some guidance for future Regional development.

8.40 Various studies have shown that access to textbooks is a key factor in improving education quality. Recent surveys have indicated that in many Caribbean countries, particularly the OECS territories and Belize, the availability of textbooks has deteriorated, especially in primary schools. An immediate objective for governments is to adopt policies that guarantee textbooks are available in all schools. There is significant scope for economies of scale through regional textbook development, publishing, and procurement. Improved regional cooperation could be achieved through the establishment of regional and subregional committees, convened by CARISEC and the OECS secretariat, to standardize the textbook selection process. A regional approach could be adopted for the publishing of textbooks to allow for economic print-runs of widely-used existing texts (e.g., primary mathematics) combined with negotiating publishing rights with regional and international publishers. Regional and OECS subregional cooperation should provide economies of scale. The introduction of rental schemes could assist in containing additional government expenditure while making purchases easier for parents. The Jamaican and Trinidadian Primary Textbook Projects, a new project proposed for Belize, and the Barbados and Jamaica Secondary School rental schemes represent helpful models in guiding policies and implementation strategies.

8.41 A longer term objective, which will underpin the efficiency of regional approaches to textbook development and procurement, should be to achieve greater harmonization of national curricula. In the OECS countries, especially at primary level, this is well advanced. CXC syllabuses contribute to commonalities at secondary level, and there are signs that secondary pre-vocational programs in several countries have much in common. To facilitate this process, the regional committees proposed could have responsibility for coordinating long-term regional curriculum and textbook policy development.

8.42 Another priority for policymakers is to improve coordination of non-formal management training. Activities are fragmented across a range of private sector organizations and NGOs. An effective coordinator could be the Caribbean Association of Industry and Commerce (CAIC), through its Small Enterprise Assistance Program, linked to national development foundations for delivery and monitoring. Potential could be enhanced by cooperation between CAIC and the UWI Women and Development Unit (WAND) to provide targeting for low-income women's groups.

8.43 Regional cooperation and understanding would be enhanced by increased capacity for intraregional exchanges of Caribbean education and training consultants. Especially in institutional development, there could be comparative advantage--in terms of knowledge of systems, social adjustment and cultural sensitivity--in more use of well qualified Caribbean nationals. There is some evidence of consultancy capacity in the Region. For example, Fry and Thurber (1989) report that Trinidad and Jamaica are the respective second and fourth largest providers of UN experts (per one million population) for developing countries. No information is available on the location of assignments; however, the fact that the same countries are second and fifth in order of receiving UN expert assistance, suggests much of it may be in-country.

8.44 Measures could be adopted to increase exchanges of personnel. First, funding agencies could encourage the use of Caribbean nationals in technical assistance programs outside their home country. The Technical Cooperation among Developing Countries (TCDC) program is one example of the approach which saw the proportion of UN experts from developing countries worldwide increase from 22 to 35 percent between 1970 and 1980 (Fry and Thurber, 1989). A second, more cooperative, and less costly approach is direct exchanges between Caribbean governments. CARNED has adopted this model. National consultants are released for short periods with costs shared between providing and receiving governments. The costs are a small fraction of traditional international technical assistance norms.

C. Increasing Donor Effectiveness

8.45 Information on donor activity in education and training in the Caribbean is provided in Annex 1. In the larger countries there is evidence of a shift towards primary education, while in smaller ones, notably the OECS territories, there is a strong bias towards secondary (including technical education) and tertiary and higher education. Among the multilateral donors there has been a bias towards capital expenditure while technical assistance, which tends to be episodic and includes substantial amounts of overseas training, has represented a high proportion of bilateral aid budgets. Activities that strengthen system management and the development of institutional capacity have, until recently, represented a small proportion of aid budgets for many donors.

8.46 The emphasis on capital aid, often at secondary and tertiary level, linked to the provision of technical assistance and overseas training, can be explained by a number of factors. First, the shortage of foreign exchange to purchase building materials and equipment, much of which is not available locally (especially in the smaller countries), makes external finance comparatively advantageous. Second, focusing aid on a small number of secondary/tertiary institutions reduces the burden on local project management capacity and funding agency managers. Governments and donors often find it easier, administratively, to support overseas training than organize it locally. Third, capital aid projects facilitate the setting and monitoring of performance targets by governments and donors. On the other hand, strengthening management systems and institutional capacity tends to be a longer, less exact process and the time-frames may not mesh easily with aid disbursement schedules. Institutional development places a greater emphasis on the need for strong local management capacity, and performance indicators are harder to specify and monitor.

8.47 Limitations in regional and national capacity for policy analysis and planning also contribute to the focus on project aid. However, Public Sector Investment Programs (PSIP) are often insufficiently underpinned by overall national and sector policies and are reduced to the status of a "shopping list" with which governments approach donors. In some cases this causes inconsistencies, overlap, and conflict in planning and policy at the implementation stage and reduces the effectiveness of coordination of aid inputs by both governments and donor agencies.

8.48 To address these issues, in the short to medium term an increased proportion of education aid might be targeted at strengthening those national and Regional institutions concerned with policy analysis, design and implementation together with more emphasis on policy conditionalities as an incentive towards reform. Appropriate systems for consultation and collaboration between donor groups and respective governments would also be required to assist policy and program implementation. The following discussion focuses on these two themes.

8.49 The development of national education plans and the capacity for policy analysis is a lengthy and not immediately productive process. Nevertheless, it is central to putting Caribbean education systems on a sound footing for the year 2000 and beyond. The international community can assist governments in several ways. Donors could target increasing amounts of aid towards policy development and the improvement of management systems at regional and national levels. At the regional and subregional levels donors might be willing to support the proposed regional standing committee on education and similar task forces at sub-regional and national levels. They might also give consideration to assisting national education advisory boards through technical assistance and short-term consultancies. Additional medium-term support is also needed to strengthen education policy and planning units. This would require additional personnel, training, technical assistance, equipment and operating costs. The British Government's support for a network of Caribbean education planners, centered at CARNEID, is a tentative step forward that could benefit from consolidation.

8.50 Another area for donor support might be the testing and measurement units in education ministries, especially improvements in their capacity to inform curriculum development, define and measure student performance, and specify program equivalences and certification. At the tertiary level, this could include assistance to national training agencies (boards). At the Regional level, a priority is the establishment of a Regional accreditation body, whose task would be to assist national governments in the design, accreditation, and certification of tertiary level programs. Continued support is required for CXC, especially to strengthen its research and development capacity and its consultancy services to national testing and measurement units.

8.51 Effective policy analysis and development planning need to be underpinned by an organized program of operational research into options for containing costs, diversifying finance, ensuring effective maintenance of plant and equipment, assuring supplies of instructional materials and strengthening management. Presently, operational research capacity at Regional and national levels is very limited. Capacity could be strengthened in several ways. Donors might consider establishing national educational research funds, located in planning units, to commission work and train staff. Greater emphasis on operational research in overseas training programs could also help. Another option would be to strengthen UWI and UG's capacity to conduct applied research and assist national planning units.

8.52 Caribbean countries embarking on policy reform could benefit from sharing the experiences of other countries within and outside the Region through regular meetings and dissemination of educational research and information. The proposed Regional standing committee on education, under CARICOM, could coordinate this approach with financial assistance from donors. Structurally, CARNEID, with its network of English, Dutch, French, and Spanish-speaking countries is well placed to support such a thrust. It would require support in terms of personnel, technical assistance, and equipment.

8.53 Caribbean governments will require incentives to undertake what may be difficult policy reforms. The best incentive is an assurance of long-term financial support. Such support might be increasingly linked to the achievement of agreed policy reforms rather than shorter term project objectives. The international community will need to ensure that their various inputs are consistent with these policy objectives and that sources of aid are complementary and not conflicting. This will require more effective donor coordination than exists presently. As a first step, the donor community could consider co-financing technical assistance teams to assist governments with policy development and strengthening policy and planning units and management systems. An international approach to technical assistance is especially important in the Caribbean because of the education system linkages with the United States, Canada and European countries. Assistance for these international task forces could be coordinated through the CARICOM and the OECS secretariat.

8.54 There is also scope for greater use of country-specific donor consortia in education and training. The CDB's Project Advisory Committee is a step in this direction but its mandate is narrow. Once a country has prepared its education plan, donors could be invited to a forum where the strategy is presented and reviewed. UNDP recently organized such a forum on the social sectors in Jamaica. This is a model that could be used for education throughout the Region. Another option is for governments themselves to call ad hoc meetings of donors once a policy framework and operational plan have been developed. These forums could provide greater opportunity for more co-financing of education development plans than exists presently.

ANNEXES

1. Donor Aided Education Program
2. Lessons from the World Bank's Education Lending to the Caribbean
3. A Way Forward

DONOR AIDED EDUCATION PROGRAMS

This annex provides a list of donor-aided education projects on-going and in the pipeline in the Caribbean countries covered in this study. It attempts to be as comprehensive as possible; however, projects totaling less than US$0.1 million and projects of some smaller donor agencies, foundations and NGOs working in the Region are not included. Sources of information include donor materials, annual reports, officers and the donors' Regional offices, and the 1988/93 Public Sector Investment Programs produced within the Caribbean Development Bank for each country. The major donors include:

Bilateral: Agencies	Governments of Canada (CIDA), France, Germany, the Netherlands, Norway (NORAD) Switzerland, Taiwan, the United Kingdom, the United States (USAID) and Venezuela.
United Nations: Agencies	United Nations Development Program (UNDP). United Nations Education, Science and Cultural Organization (UNESCO), United Nations Childrens Fund UNICEF)
Multilateral: Agencies	Caribbean Development Bank (CDB), Commonwealth Fund for Technical Cooperation (CFTC), European Economic Community (EEC), Inter-American Development Bank (IDB), Organization of American States (OAS), Organization of Petroleum of Petroleum Exporting Countries (OPEC) and World Bank.

ANTIGUA-BARBUDA

EEC: 1989/94 - Scholarships and training in livestock production at UWI; training of radar operators and public sector management. Cost: US$1.2 million.

Pipeline (1993/94) - Construction of secondary school and reconstruction of hotel training center with equipment and teacher training. Cost: US$3.6 million.

UK: 1991/93 - St. Johns's Votec Center: to increase the productivity of all-age primary school graduates, construction of a votec facility curriculum and staff development. Cost: US$2.5 million.

1990/92 - Swetes Village All-Age Primary School: project aims to increase the output and qualifications of all-age graduates for entry into the semi-skilled labor market and Antigua State College craft/commercial courses. Cost: US$1.5 million.

UNDP: 1988/1991 - Hotel Training Center: Technical assistance. Cost: US$0.17 million.

1988/92 - Antigua State College Project: provides technical instructors. Cost: US$0.3 million.

UNESCO 1987/91 - Education Micro-projects: includes emergency aid, science program and educational management support. Cost US$0.24 million.

THE BAHAMAS

EEC: 1989/93 - Caribbean Hotel Training Program: development of hotel training systems and student housing. Cost: US$5.5 million.

IDB: Pipeline (1992/95) - Primary and Secondary Education Project: support for school construction, curriculum development, improved supervision by MOE. Estimated Cost: US$34 million.

World Bank: 1988/92 - Second Technical/Vocational Training Project: improve tourism training and vocational training centers. Cost US$10 million.

BARBADOS

EEC: Pipeline (1992/93) - Rehabilitation, extension, and refurbishment of tourism training facilities at the Community College. Cost US$3.2 million.

Pipeline (1992/97) - Multi-sectoral scholarships for study abroad. Cost: US$.97 million.

IDB: Pipeline (1992/96) - Primary Education Project: Would support school construction and consolidatation, textbook procurement, assessment, and MIS. Estimated cost: US$ 11.6 million.

IDB/ World Bank: 1986/92 - Education and Training Project II. Upgrading education through 3 components - primary/secondary, vocational/technical, and management/planning - through such means as facility construction school amalgamation, equipment, teacher and staff training, evaluation and feedback. Cost IDB - US$8.75 million; IBRD - US$8.5 million.

UK: 1990/93 - Business Education Project: to improve business training of high school graduates with equipment, curriculum reform, staff training, Business Education Center management reorganization, and teacher education facility reforms. Cost: US$0.35 million.

UNESCO: 1987/91 Education Micro-projects: includes contribution to training science and industrial arts teachers and to primary social studies curriculum development. Cost: US$0.15.

USAID: 1985/ongoing - Scholarships: CLASP I and II: local and US academic and technical training for such groups as primary and secondary school teachers, youth leaders, and business people. Cost: US$14.0 million.

World Bank: Pipeline (1992) - Education III: parallel project to IDB's. Includes technical/vocational curriculum development, assessment, teacher training, and institutional development, and support for labor market analysis. Estimated Cost: US$32 million.

BELIZE

CDB/ USAID: 1991-92 - Basic Needs Trust Fund: school construction and equipment. Cost: US$0.45 million.

CFTC: 1991 - University/technical: fellowships, training, and technical assistance in geology, engineering, law, land surveying, management, small scale industry equipment. Cost US$0.1 million.

Taiwan: 1990/2 - Employment and Training Center: strengthen skills training. Cost US$0.25 million.

UK: 1987/92 - Strengthening Curriculum Development Unit: improving curriculum development capacity through technical assistance and staff development. Cost US$0.75 million.

UNESCO: Pipeline - Adult and Continuing Education and Literacy: includes strengthening literacy programs, materials, and survey, over 5 year period. Estimated Cost: US$0.8 million.

- Pre-school, Special education, School projects: includes early childhood resource center and social studies textbook development project over 5 years. Estimated Cost: US$2.1 million.

USAID: 1985/93 - Training for Employment and Productivity: supports development of non-traditional exports and tourism through organization, teacher training, equipment, placement for youth and improvement of Belize Institute of Management with staff and teacher training, a new training center. Cost: US$7.7 million.

1985/ongoing - Scholarships: CLASP I and II: overseas long-term technical and academic training awards for fields contributing to technical advancement, social/community development, cultural preservation; short-term leadership and organizational development for volunteer and community organizations. Cost: US$2.2 million.

World Bank/UK: 1992/97 - Primary Education Development Project: strengthen primary education through teacher training, educational program development, and planning and management. Cost: IBRD - US$7.1 million; UK - US$1.3 million.

DOMINICA

CFTC: 1991 - University/technical: fellowships, training, and technical assistance in law, agriculture, surveying, small scale industry/equipment. Cost: US$0.1 million.

CIDA: 1989/92 - Strengthening sector planning. Cost: US$0.2 million.

EEC/France: 1992/97 - Multi-sector scholarships. Cost: US$0.3 million.
1988/92 - French House Project: construction of an education and cultural center. Cost: US$0.2 million.

UK: 1989/92 - Community Development Program, support for non-formal education and training and strengthening infrastructure. Annual cost US$0.8 million.

UNDP: 1988/91 - Manpower Development Project: technical subjects. Cost: US$0.25 million.

UNESCO: 1987/92 - Education micro-projects; Includes literacy (Teaching of Reading Project), teacher training and language skill development, formal and non-formal education. Cost: US$0.12 million.

Pipeline - Curriculum development and teacher resource center over 2 years. Estimated Cost: US$3 million.

USAID: 1989/92 - Construction of primary schools and Roseau Junior Secondary School. Cost: US$0.7 million.

World Bank/OPEC/CDB: 1988/93 - Extension/rehabilitation of 8 secondary schools and a Technical College, and teacher training (IDA/OPEC: US$0.8 million); equipment and furniture (CDB: US$0.4 million)

DOMINICAN REPUBLIC

IDB: 1991/94 - Educational reform at the Elementary School Level; new buildings, teachers' colleges, textbook development and staff training. Cost: US$29.3 million.

1990/94 - Teacher Education Project: expansion of technical-vocational education at secondary and post-secondary levels, and student loans. Cost: US$20 million.

USAID: 1990/96 - Private Initiatives in Primary Education; Focus on private schools in poorer areas of Santo Domingo. Includes instructional materials, teacher and supervisor training, development of standardized math and Spanish tests, MIS. Cost: US$5.5 million.

1983/91 - Graduate Management Training: MBA and MPA programs, hotel management and tourism training. Cost: US$6.5 million.

1986-94 - Development Training Project: training for public sector managers and private sector organizations for export development. Includes master's degrees and seminars. Cost: US$15.0 million.

1985/96 - Scholarships: stress on long-term training for employment for rural disadvantaged youth at junior and community colleges; short-term training for entrepreneurs, public officials, university professors. Cost: US$3.4 million.

World Bank: 1991/97 - Primary Education Development Project: strengthen primary education and institutional support with in-service teacher training, improved supervision/evaluation, text distribution, school maintenance, and school nutrition. Cost: US$15.0 million.

GRENADA

CFTC: 1991 - University/technical: fellowships, training, and technical assistance, includes public administration, hotel management, school subjects, agriculture, engineering, and systems. Cost: US$0.2 million.

UK: 1988/92 - Grenada National College Institutional Development: refurbishment of plant and equipment and curriculum and staff development. Cost: US$0.7 million.

UNESCO: 1987/91 - Education Micro-projects; includes secondary teacher in-service training. Cost: US$0.15 million.

World Bank/ OPEC CDB: Multi-purpose training center, rehabilitation of Technical College, teacher training (IDA/OPEC - US$0.8 million) and furniture and equipment (CDB - US$0.3 million).

GUYANA

CFTC: 1991 - University/technical: fellowships, training, and technical assistance in meteorology, agriculture management, law, information analysis and technology, entrepreneurship, small scale equipment. Cost: US$0.2 million.

CIDA: 1989/94 - School Exercise Book Project. Cost US$3 million.

IDB: 1990/95 - Primary Education Improvement Program: school construction and rehabilitation, textbook production, and teacher training. Cost: US$46.4 million.

UNESCO: 1986/91 - Education Micro-projects: includes basic education, grades 7-9, integrating disabled into primary schools, fellowship in distance education. Cost US$0.16 million.

Pipeline - Teacher training, development of educational support facilities, book loan scheme, educational broadcasting, school mapping, over 3 year period. Estimated Cost: US$2.95 million.

- Improve vocational/technical programs, maintain/repair school science equipment. Estimated Cost: US$0.8 million.

HAITI

CIDA/ World Bank 1992/95 - Education Project V: to improve access to, quality, and efficiency of primary education, particularly in rural areas and the poorest schools, while strengthening education sector management. Estimated cost: US$12.6 million.

IDB: Pipeline (1993/96) - Technical/Vocational Project. Estimated cost: US$9 million.

USAID: Program suspended. Includes 3 projects:
1986/93 - Incentives to Improve Basic Education: support for private school sector to improve primary education in rural and depressed urban areas. Cost: US$20.0 million.

1985/92 - Establishment of a Management and Productivity Center for management and supervisory training. Cost: US$4.1 million.

Scholarships: Long-term training for youth leaders, and short-term training for organizers, officials, and entrepreneurs. Cost: US$3.7 million.

World Bank/ IDB: 1991/95 - Economic and Social Fund Project: Supports upgrading pre-school centers and primary schools; furniture and teaching materials; literacy, vocational training programs. Cost (education): IDA - US$2.5 million; IDB - US$2.4 million.

World Bank/ Swiss: 1985/92 - Education Project IV: Basic Education reform, vocational/ technical training, and strengthening educational sector management. IDA - US$10.0 million; Swiss - US$6 million.

JAMAICA

Canada/IDRC: 1989/92 - Information and Documentation System: strengthen the Documentation and Data Center of ISER and facilitate development of computerized data access facilities to support the Consortium Graduate School. Cost: US$0.2 million.

CIDA: 1987/92 - Institutional support to the Jamaica Institute of Engineers: Upgrade local technical expertise in bridge engineering. Cost: US$1.1 million.

CFTC: 1991 - University/technical: fellowship, training, and technical assistance includes dentistry, occupational health and safety, management, engineering, agriculture, central banking, information technology. Cost: US$0.2 million.

CIDA: 1990/95 - Jamaica Training Program: provides regional and overseas training awards. Cost: US$4 million.

EEC 1983/92 - Multi-annual Training Program; public sector training awards. Cost US$7 million.

1987/91 - Public Sector Training Center; construction of training center. Cost US$0.8 million.

1989/92 - Scholarships and Training: regional and overseas training awards. Cost: US$0.25 million.

IDB: 1984/92 - Primary Education Improvement Project; school construction, teacher training, testing and measurement, and library equipment. Cost: US$45.8 million.

Pipeline (1992/96) - Primary Education Improvement Project II: includes support for school construction, teacher training, textbook production, strengthening MOE with MIS and improved evaluation capability. Estimated Cost: US$25 million.

Netherlands: 1989/92 - Primary School Classrooms Project. Cost: US$0.2 million.

NORAD: 1989/94 - Maritime Education and Training Project: training and education of seagoing and land-based maritime personnel. Cost US$4.8 million.

UK: 1990/ongoing - Support for Caribbean School of Architecture, CAST: secures appropriately qualified local architects for the region by improving CAST's program delivery capacity. Cost: US$0.14 million.

1987/94 - Secondary Schools Textbook Project: increase textbook distribution and usage through rental schemes, textbooks development and in-service teacher education. Cost: US$9 million.

Pipeline (1993/95) - All-Age Schools Textbook Project: strengthen curriculum and staff development in agricultural and technical-vocational education. Estimated Cost: US$2 million.

UNESCO: 1987/91 - Education Micro-projects: includes contribution to establish a model rural community information system, workshop teaching math, computer science; literacy activities. Cost: US$0.3 million.

Pipeline - Support for pre-school curriculum; expansion of special education and computer instruction and reading materials for secondary education, over a 3 year period. Estimated Cost: US$0.4 million.

- Support for primary level educational planning (Phase II) and the Jamaica Basic Education Project over a 5 year period. Estimated Cost: US$2.1 million.

- Support for strengthening literacy and adult education over a 5 year period. Estimated Cost: US$3.75 million.

- Support for basic skills, skilled and semi-skilled training; agricultural education over a 3 year period. Estimated Cost: US$1.95 million.

UNICEF: 1989/92 - Training/Employment for Disabled Females, Adolescent Mothers: Includes training disabled females, adolescent mothers in skills, continuing education for adolescent mothers. Cost: US$0.2 million.

USAID: 1985/95 - Primary Education Assistance I and II: support production and distribution of texts and teachers' guides on newsprint, improve schools, train local leaders to maintain schools, and support policy studies. Cost: US$11.0 million.

1989/92 - Agricultural Education Project: new facilities and curriculum and staff development at secondary and post-secondary levels. Cost US$3.5 million.

1991/96 - Technical/Vocational Education: develop formal and non-formal vocational skills training system through MIS, strengthened MOE and school administration, renovation, equipment, and curriculum development. Cost: US$3.5 million.

1987/95 - UWI Management Education: includes support for a 2 year part-time MBA program for senior business leaders such as institutional development and a computer center. Cost: US$4.4 million.

1985/ongoing - Scholarships: CLASP I and II: 1) Training for teachers, entrepreneurs, labor union officials, public/private mid-level managers; and 2) Training for disadvantaged groups, particularly women, in various sectors. Cost: US$2.4 million.

World Bank: 1989/94 - Social Sectors Development Project: three components include renovation of basic, primary, and all-age schools, and institutional strengthening, and Human Resource Development Program (HRDP) administration and monitoring support. Cost: US$30 million.

1988/92 - Education Project IV; (1) spport for preparation and evaluation of options to rehabilitate and develop the education program for grades 1-9 and particularly 7-9; and (2) strengthen the student loan scheme for higher education. Cost: US$8.3 million.

Pipeline (1993/98) - Social Sectors Development Project II: includes improving the quality, administration, and evaluation of lower secondary education, with particular emphasis on reducing disparities among parallel systems. Estimated Cost: US$50 million.

ST. KITTS-NEVIS

CDB: 1989/92 - Support for equipping the College of Further Education. Cost: US$0.1 million.

CFTC: 1991 - University/technical: Fellowships, training, and technical assistance include languages, school subjects, law, English, central banking and small-scale industry equipment. Cost: US$0.2 million.

EEC: 1990/92 - Schools Rehabilitation Project: construction of new primary schools, furniture and teaching aids in St. Kitts and Nevis. Cost: US$2.8 million.

UK: 1989/91 - St. Kitts and Nevis College of Further Education Institutional Development; technical assistance for institutional planning and staff development. Cost: US$0.3 million.

World Bank/ OPEC/ CDB: 1987/92 - Technical/Vocational Education Project: construct a hotel training unit and 2 new multi-purpose training centers (IDA/OPEC - US$1 million) and provide furniture and equipment (CDB - US$0.4 million).

ST. LUCIA

CFTC: 1991 - University/technical: fellowships, training, and technical assistance in economics, accounting, sociology/law, agricultural and marine resource management, medical laboratory technology, and small-scale industry equipment. Cost: US$0.1 million.

CIDA: 1990/96 - Post-Secondary Institutional Development: strengthening management and delivery capacity at Sir Arthur Lewis Community College. Cost: US$2.5 million.

EEC: 1988/92 - Tertiary Level Education Project: construction of library and learning resource center for Sir Arthur Lewis Community College. Cost: US$1.5 million.

Pipeline (1993/97) - Extra-regional studies and courses. Cost: US$0.95 million.

UNESCO: 1987/91 - Education Micro-projects: includes teacher training/special education, upgrading MOE capacity for evaluation. Cost: US$0.13 million.

USAID/ CDB: 1989/93 - Schools Extension Project and Secondary School Construction: improved access to primary and secondary school facilities. Cost: US$1.7 million.

World Bank OPEC/ CDB: 1989/92 - Technical/Vocational Education Project: improve physical plant and develop curriculum and staff at secondary and post-secondary levels; construct a multi-purpose training center and a wing of the Technical College; provide teacher training (IDA/OPEC - US$2.2 million) and furniture and equipment (CDB - US$.9 million).

ST. VINCENT

CDB: 1987/92 - Student Loan Scheme: overseas training awards. Cost: US$0.3 million.

EEC/ France/ Venezuela: 1991/93 - Post-secondary facility: provides new science and facilities. Cost: US$2.0 million.

UK: 1990/92 - Community Development Program: support for non-formal education and training. Cost: US$0.5 million.

1987/93 - All-Age Primary and Rural Secondary Education Project: support for construction of pre-vocational facilities, equipment, curriculum and staff development and staff development. Cost: US$4-5 million.

USAID: 1989/92 - Construction of new Law Library: improve facilities for legal training. Cost: US$0.4 million.

World Bank/OPEC/CDB: 1988/92 - Technical/Vocational Education Project: includes 2 new multi-purpose training centers, teacher training (IDA/OPEC - US$1.7 million) and furniture and equipment (CDB - US$0.8 million).

TRINIDAD AND TOBAGO

EEC: 1989/94 - Macro- and Sectoral Planning Project: supports training national planning staff, supplying computer equipment, and training in macroeconomic sectoral planning. Cost: US$1 million.

1989/ongoing - Develop capacities of San Fernando and J.S. Donaldson technical training institutes, of technology transfer and of the Ministry of Energy and Natural Resources. Cost: US$3.4 million.

IDB: 1991/93 - Feasibility Study in preparation of Technical Education Project. Cost: US$0.6 million.

1987/91 - Primary Education Program: support establishment of a learning resource center for materials production and design, construction and equipping of 16 primary schools, a school library and facilities, and teacher training. Cost: US$29.9 million. Pipeline (1993-96) - Technical/ Vocational Education Project. Estimated Cost: US$15 million.

UNESCO: 1986/91. Education Micro-projects: Includes MIS and audio-visual equipment for educational television. Cost: US$0.18 million.

World Bank: 1991/96 - Proposed Youth and Training for Employment Project: career enhancement, vocational skills, self-employment training, and work experience in enterprises for out-of-school youth ages 15-25. Cost: US$20.7 million.

CARICOM REGIONAL

CDB/IDB: Pipeline (1992/95) - General restructuring of UWI including the School of Continuing Studies and the UWIDITE (University of the West Indies Distance Teaching Experiment) System. Staff and curriculum development, construction/refurbishment on 3 campuses, equipment, materials, and furniture. CARICOM. Estimated Cost: IDB - US$56 million; Region - US$24 million.

CDB/USAID: 1984/92 - Basic Needs Trust fund (BNTF): supports civil works, including for schools. Cost: US$26 million.

CDB: 1972/ongoing - Student Loan Scheme: funds available to 12 CARICOM countries. US$36 million approved to date.

CIDA: 1990/95 - CARICOM Scholarships Program. Cost: US$4.3 million.

- UWI Institutional Strengthening Project: focuses on strengthening UWI Outreach capacity. Cost: US$9 million.

1989/95 - Canadian Training Awards Project: provides regional and overseas training awards. Cost: US$29 million.

EEC: 1990/93 - Student Accommodation Project: new housing at UWI, CAST and other regional institutions. Cost: US$20.2 million.

1989/92 - CXC Data Processing Project: improves data processing capacity at Caribbean Exams Council. Cost US$0.94 million.

1990/93 - UWI Institutional Strengthening: construction, research, equipment, library development for distance education. Cost: US$7.8 million.

UK: 1987/91 - Policy Development and Planning Project: strengthens capacity in sector planning and curriculum development through technical assistance and overseas training. Cost: US$1.5 million.

Annual - UK Training Program (UKTCTP): bilateral training awards at UK institutions. Cost: US$3 million/year.

- West Indies Scholarships Training Scheme (WISTS): training awards at Regional training institutions. Cost: US$1.5 million.

UNICEF: 1988/93 - Multi-Island Project: support for early childhood and health education in nine countries. US$1 million.

OECS SUB-REGIONAL

EEC: 1990/93 - OECS Tertiary Education Project: supports improvement in physical facilities, OECS management, and teacher training. Cost: US$8.2 million.

Germany: 1989/93 - Sub-regional Technical Education Project: strengthens institutional, curriculum and staff development at secondary and post-secondary level. Cost: US$2.5 million.

ILO/ UNDP/ UNESCO: 1987/91 - Multi-Island Education Project: provides short-term technical education specialists. Cost: US$0.1 million.

UK: 1988/91 - Post-Secondary Institutional Strengthening: strengthening computer-assisted learning and library facilities in OECS. Cost: US$0.8 million.

1987/ongoing - OECS Technical/Vocational Teacher Training Project: strengthens capacity for program delivery of Sir Arthur Lewis Community College/St. Lucia & Antigua State College. Cost: US$0.85 million.

USAID: 1986/95 - University: Regional Management Training Project: All OECS countries and Barbados. Supports establishment of the Center for Management Development at UWI/Cave Hill to offer management training and education programs, including a part-time 2-year executive MBA program. Cost: US$5.9 million.

1982/92 - Regional Non-Formal Skills Training Project: support upgrading of skills of unemployed and underemployed youth and development of financially sustainable training systems in each country. Cost: US$7.8 million.

Pipeline (1993/98) - Basic Education and Training: policy and curriculum development, teacher training, and basic education and vocational management for 6-16 year olds. Estimated Cost: US$2.2 million.

World Bank/CDB/OPEC: 1988/93 - Technical and Vocational Education Project: project in five OECS member states at the Secondary School and Technical College levels: support for curriculum development, labor market information systems, and technical/vocational management. Cost: IDA - US$6.0 million; CDB - US$2.8 million; OPEC - US$2.5 million (see individual country references).

Pipeline (1993) - General Education Project: to support improvements in basic schooling undertaken at the national and subregional levels as follow-up to the report on education in the OECS member states.

LESSONS FROM THE WORLD BANK'S EDUCATION LENDING TO THE CARIBBEAN

Background

1. The World Bank has been lending for education in the Caribbean region since the mid-1960s. As of the end of 1991, it had approved 25 projects for a total cost of U$231 million. The Bank's lending in the sector has extended to most of the countries in the region, either directly or through the Caribbean Development Bank for the Leeward and Windward Islands. The Bank has had five operations in Haiti, four each in Jamaica and Trinidad and Tobago, three in the Dominican Republic and Barbados, and two in The Bahamas and Guyana. A first operation in Belize was approved in 1991.

2. During the past two decades of the Bank's involvement in the region, the Caribbean education systems have experienced considerable growth and development. Primary and secondary school enrollments have expanded dramatically, as have the number of teachers and classrooms. Today, primary schooling is almost universal throughout the region and universal secondary schooling is not far behind. There have also been significant qualitative improvements. Most countries have upgraded the qualifications of many of their teachers, revised curricula in line with socio-cultural changes and evolving human resource requirements, and built and equipped school facilities, especially for technical vocational education at the secondary and tertiary levels. These and other achievements in education were made possible by a combination of positive GDP growth rates and substantial investments in human resource development in the 1970s and early 1980s.

3. The Bank's education lending in the region during this period followed patterns similar to lending in other regions. The major thrusts involved: expanding and diversifying educational and training opportunities, particularly in technical and vocational education, by constructing and equipping school facilities, improving curriculum content, and expanding and reforming related teacher training. These initiatives were usually accompanied by measures to enhance the effectiveness and efficiency of the education system by strengthening management and administration in the Ministry of Education.

4. This analysis of the Bank's education lending is based mainly on information and judgments of the appraisal, completion and evaluation reports of 11 completed projects. Where feasible, interviews were held with Bank staff and country officials knowledgeable of the projects to supplement the written record. The projects selected are from countries where the Bank has been heavily involved in the sector or where it financed an interesting project. These are: Jamaica, Haiti, Trinidad and Tobago, and Barbados.

5. The main purpose of the review is to convey some of the important lessons learned from past Bank sector operations that might help improve the quality and effectiveness of future projects. It is not a synthesis of the findings of earlier project reports. Rather, it is a frank reflection on issues and lessons learned about topics of

strategic importance in the conceptualization and implementation of projects, particularly in small island economies. These topics include project finance and internal efficiency, project implementation and sustainability, institution building and policy development. The Caribbean region offers unique lessons with regard to working in small countries and several of these lessons are elucidated in the review. Not surprisingly, however, many of the issues and lessons learned from the Bank's experience in Caribbean education are similar to those from other countries and sectors.

Finance and Internal Efficiency Improvements

6. What has been the Bank's experience in financing of project implementation in the Caribbean? How have institutions and programs promoted under the projects fared after project completion? The review reveals that virtually all Bank-financed education during the period experienced varying degrees of financial difficulties. These arose from three main sources: the resource demanding nature of the projects financed; implementation delays; and domestic economic developments. Attempts at improving internal efficiency of education systems had mixed results. Proposed increases in teacher-student ratios fell short of expectations; but double shift experiments were implemented, even though parents found them inconvenient.

7. Bank staff routinely assess the financial implications of proposed education projects to ensure their feasibility and sustainability. However, in past operations, the assessments generally overestimated the ability of Caribbean governments to bear fully estimated project costs, especially projected recurrent expenditures. As a result, borrowers were often not able to meet the increased financial burden of the projects during both the construction and the operational phases, and were forced to make some reductions in project scope.

8. Two main factors have contributed to increasing the financial burdens of projects. One has been implementation delays in staff recruitment, procurement, and construction. These delays substantially augmented costs beyond appraisal estimates. The second has been the deterioration in the macroeconomic environment in a number of countries resulting in substantial currency devaluations that increased governments' financial obligations. For example, the first Bank-financed project in Barbados was fully implemented but costs were 55% above appraisal estimates. The Government's financing share increased from 38% to 47%, even with a supplementary loan made by the Bank. In the Bank's first project in Haiti, there was cost overruns of about 20% of appraisal.

9. Financial difficulties were less severe for tertiary technical and vocational training institutions, which drew on a network of the business and industrial community to participate in and support their efforts. Examples of these successes are the Institute for Management and Productivity in the first Barbados project and the College of Arts, Science and Technology in Jamaica. Where such connections with the industrial community were not achieved, as in the second project in Haiti, vocational training was not effective and the training center ceased to function.

10. In a few cases, the Bank supported improvements in the internal efficiency of the education system, but unfortunately the outcomes were not successful. Again in

the case of Barbados, failure to predict a 17% decline in school enrollments, combined with a net increase in teachers instead of a projected decline due to attrition, led to student/teacher ratios of 18:1 versus appraisal projections of 29:1. In other cases, such as Jamaica, difficulties were encountered in reducing the number of teachers at a time of high national unemployment and mounting social unrest.

11. The introduction of a double-shift system was also attempted as a means to improve internal efficiency and limit investments in new school facilities. Double shifts were piloted in selected schools in the second operation in Jamaica and the first one in Trinidad and were successful, but created serious inconveniences. Social pressures to expand secondary enrollments lessened original resistance to the shift system. In Haiti, very limited double shifting was introduced in some urban schools. In rural areas, parents were not willing to send their children to afternoon school, especially when it was located over four kilometers away; and teachers were not prepared to work mornings and afternoons without a salary supplement, which was offered to their urban counterparts.

12. In the current environment of continuing fiscal crises and the severe impact on expenditures of economic stabilization programs, most of the issues raised here and their implications are obvious. Caribbean Governments and the Bank need to: (a) make sure that education sector projects are not prepared in isolation from the macroeconomic environment and its future direction; (b) analyze carefully the demographic data and projections; (c) assess the financial implications of future operations, particularly in terms of government's ability to meet increased recurrent budget expenditures required to sustain project outputs; (d) make realistic analyses of financing expansion through improvements in internal efficiency, including more in-depth work when introducing cost-cutting ideas that impact on social habits, like double shifting of students; (e) for selected institutions, explore how they can potentially develop some self-reliance in finance; and (f) assess the risks and implications to the implementation and operation phases of the operations in case resources are not adequate.

Implementation

13. When was project implementation most successful and under what circumstances? What were some of the major implementation problems? The breadth and scope of the projects reviewed bring out a possible dilemma that may have existed in designing education projects. The need for the expansion of education access and improvement of the education systems' external efficiency was obviously very great. But, should a project be tailored to the management capacities of the government or be more ambitious by including in the design technical assistance and training of local staff to overcome local management and administrative constraints? How ambitious should that effort be? The implementation outcomes provide a rather unequivocal answer.

14. The most successful projects have been those that were designed in line with the governments' implementing capacities augmented by modest technical assistance, as occurred in the Bank's first education project in Guyana. Where too much emphasis was placed on expatriate project management, the overall project implementation results were not satisfactory. Gains in some areas of physical implementation were offset by an adverse impact arising from delays in appointing counterpart staff and developing

local skills and institutional capacities for the future. This occurred, for example, in the third operation in Trinidad and Tobago and the second one in Jamaica.

15. Many projects, as previously noted, were implemented with up to a three-year delay from appraisal estimates. Invariably, problems with the staffing of the project units, delays in land acquisition, and preparation of acceptable architectural designs, contractor difficulties and procurement delays all adversely affected the pace of implementation. It could reasonably be expected that repeat operations may have been more successfully implemented, but this was not necessarily so. Success in one case became a failure in others. For example, the successful use of local contractors in the first Guyana operation to strengthen the local construction industry, had exactly opposite results in the second operation in Jamaica. Hiring foreign experts to advance procurement also had different results in Haiti and Jamaica. Where architectural designs of schools existed, decisions were taken under the second education project in Jamaica to prepare new ones. On the other hand, a consistent finding was that where site acquisition had been completed before project approval, delays were eliminated.

16. The conclusion from reviewing the record of project implementation is that all issues pertaining to implementation need to be analyzed thoroughly in preparing each project, no matter what the previous country experience might have been. Compromises in preparation have inevitably been revealed during implementation. The most glaring example is a case where of the 37 schools that were to be built or extended under the third education project in Trinidad and Tobago, only two extensions to existing schools were actually completed. Evaluating the construction industry is often necessary in planning civil works. The performance of this industry depends not only on the financial strength, assets, and experience of each company, but also on the macroeconomic environment, current and projected demand in the sector, and access to credit.

17. Local staff continuity and participation in all project phases as occurred, for example, in the first operations in Barbados and Guyana, greatly contributed to their successful implementation. In Haiti local staff prepared the third project with IDA assistance (in contrast to UNESCO's preparation of previous projects) and participated in its implementation. This continuity had a very positive impact on implementation. Turnover and/or part-time assignment of staff in project implementation units has been a cause of implementation problems and delays in Jamaica, Trinidad and Tobago, and in Guyana during the Bank's second operation. Even with repeat projects, where there is a presumption of some sort of institutional continuity, key staff turnover has had inimical implications for the project. Staff turnover in architectural consulting firms hired to supervise aspects of project implementation also introduced costly discontinuity, as in Jamaica.

18. With staff changes there appears to have been on the part of the Bank a less rigorous scrutiny of project staff qualifications, compared with the initial appointments. This was accompanied by a reluctance to use leverage to obtain better appointments and conditions. Apparently, once project implementation had begun, Bank staff became more concerned with short-term problems of filling vacancies in project units, rather than with the longer term impact of poor staffing on implementation. A certain qualitative compromise took place, with a preference to have someone in place than no

one. In addition, new recruits rarely were given the training and exposure, their predecessors had to Bank policies and procedures for implementation.

19. Bank project supervision missions are useful vehicles for addressing a wide range of project implementation issues. However, the reviews carried out by Bank staff tended to focus primarily on the physical aspects of the projects. Greater participation of educators in the early stages of project implementation, particularly in the countries implementing major education reforms (Jamaica, Trinidad and Tobago), would have been beneficial for both the project as well as on the evolving dialogue with the Bank on national education objectives. In some cases, especially in the second project in Trinidad and Tobago, educators participating in supervision missions were preoccupied more with the physical aspects of project implementation than educational objectives and issues. In this case the authorities counteracted that by appointing an educator in the project implementation unit.

20. Bilateral donor agency cofinancing for technical assistance may have contributed to the lesser emphasis on supervision of education objectives by the Bank. In various projects in Guyana, Jamaica and Trinidad and Tobago three additional donors were providing technical assistance (usually CIDA, UK and USAID but also EC). Further, the synchronization of activities of the different organizations and their supervision is clearly more difficult under these circumstances. In the first project in Guyana, only about half of the available technical assistance from CIDA was utilized by the time the bilateral agreement expired, which affected the availability of practical subject teachers, teacher trainers and school supervisors. More emphasis must be placed, therefore, on donor coordination and collaboration to ensure proper use of technical assistance so that the overall and specific project objectives can be met. A recently approved Bank-financed primary education project in Belize has a large technical assistance and training component prepared and cofinanced by the UK; the project, including the technical assistance, will be jointly supervised by the two organizations.

21. In summary, some of the important lessons in implementation are: (a) great care should be taken in designing feasible operations to avoid overburdening the limited implementation capacity of local authorities, even if they are supported by extensive technical assistance; (b) the Bank should increase its coordination with other donors in the design and implementation of technical assistance through joint missions; (c) site selection and acquisition must be secured before project approval; (d) local construction capacity must be studied in terms of the demands of the project; review carefully the fragility of individual contracting firms and develop workable alternatives; (e) encourage staff continuity throughout the project cycle both in the Bank and the borrowing countries; and (f) while staff turnover is inevitable during the cycle of project implementation, attention should be focused on how to minimize the costs of discontinuity by addressing rigorously the qualifications of new appointments, the arrangements for work on the project, and training requirements.

Sustainability

22. It is generally understood that a project is sustainable if there is a continuation of desired benefits from the investment. Sustainability is affected by a variety of factors during and after project implementation, such as the overall support by government of sector policies, resource availability, the development of institutions, and the appropriate use of staff after training.

23. Work done in the Bank on the sustainability of investment projects in education has focused on five categories of sustainability indicators: those relating to inputs, outputs, measuring efficiency, indicating qualitative aspects of the production process, and denoting whether the project has generated spin off effects. While it is not possible to replicate the model here, some general remarks can be made.

24. Input indicators include the physical facilities, teachers and materials, and equipment. While in a number of Caribbean projects there has been some scaling down in the construction of facilities because of financial constraints, all projects with the exception of the third operation of Trinidad and Tobago, have made a substantial positive contribution to developing and sustaining major changes in education as measured by all three indicators above. For example, enrollment targets for primary and secondary schools were substantially met in most projects. As already noted, in Jamaica and in Trinidad and Tobago there was limited introduction of double-shifting. Political pressures to expand educational opportunities and keep the young people in school also contributed to enrollment expansion. Enrollment targets for teacher training institutions were not met in some cases because of lack of qualified graduates (first project in Haiti) or exceeded appraisal targets (first project in Trinidad and Tobago).

25. Data for efficiency indicators is provided in the reports mainly for teacher-student ratios and some completion and retention rates. As already noted, the picture here is mixed. Generally, in Trinidad and Tobago the efficiency of the system was very high; targets were generally met in Guyana, Haiti, and Jamaica as well. They were not in Barbados. At times, some institutions showed substantial underutilization, such as in teacher training in Haiti.

26. The most adverse impact on project sustainability has been from factors external to the education system. Budget constraints, aggravated subsequently by severe stabilization programs, affected adversely the quality of educational services and outputs. Few project designs had the flexibility to address the changing requirements of the labor market. In the first operation in Guyana, where the facilities of the multilateral schools were used for vocational and adult training, the focus of this training was continually adapted to the demand for courses. When the macroeconomic environment deteriorated, affecting the urban-industrial segment of the economy, the demand for agriculture-oriented courses was promptly and successfully met.

27. Finally, with regard to spinoff effects, there are two dimensions to review: first, most governments attempted to introduce education reforms during the period under review and Bank projects were used as the vehicles for this purpose. Therefore, the sustainability of the reform efforts is of interest. Second is the question as to whether ideas and concepts introduced in project institutions were replicated in non-project

institutions. Regarding the first dimension, where substantial Bank sector work had taken place and education reforms were carefully planned and strongly supported at the highest level, as in the Bank's first operation in Guyana, the projects became suitable and successful vehicles for the implementation of the new educational reform policies. These elements can be viewed as preconditions both for successful project implementation and sustainability.

28. However, these conditions did not exist in all cases. On two occasions, in Jamaica and in Trinidad and Tobago, new educational policies were introduced by governments during project implementation. These policy changes led to radical changes in project objectives, which were implemented without a proper evaluation of the new objectives and their implications for human resources and funds. An assessment and discussion of the proposals themselves was not given adequate attention. These circumstances blurred the objectives of the projects as well as the criteria by which sustainability could be judged ex post.

29. In Haiti the attempt to introduce a second phase to the reform of primary education and use the third project financed by the Bank as the catalyst for it did not succeed. Controversies on the language to be used (Creole versus French) and other issues were not resolved before the attempt to implement the reform was announced. As a result, public support was lacking and the introduction of the reform was scaled down.

30. The most impressive spinoff effects from project concepts were observed in Guyana. Non-project schools improvised to adopt some of the changes introduced in curricula and services (such as guidance and counselling) in the multilateral schools. Further, the project schools appeared to have popularized various forms of extracurricular activities and broaden student participation in them, such as clubs, school societies, etc.

31. In reviewing the lessons learned it is evident that whenever structural changes or major improvements in the system are planned, it is imperative that they are not only preceded by sector analysis but a political consensus has developed to implement the changes. Since sustainability of a project is based on a number of diverse factors, it would be advisable to lay out as early as in the preparation stage the measurable indicators, education targets, and other qualitative variables so that implementation progress or lack of it can be assessed during project supervision and be evaluated upon project completion.

Innovation

32. In general, Bank financed projects assisted Caribbean governments to introduce a substantial degree of change and innovation in their education and training systems. However, as mentioned earlier, the sustainability of these innovations was adversely affected by economic difficulties in the external environment. Such innovations reflected education trends of the period and included the introduction of new comprehensive secondary schools and the deepening of specialized training.

33. Many additional innovations were introduced, some affecting the education system of a country at large, others more subsector focused. Under the first Bank

project in Haiti, two totally separate (administratively and substantively) education systems were merged (one urban, the other rural) into one system. In the case of Jamaica, instructional television was introduced in the first operation and its success led to continuing support and expansion of its programming under the second project. In Guyana, initiatives undertaken in project schools, such as vocational guidance and counselling, stimulated other schools in the system to replicate them. In the second Bank project in Guyana, a Caribbean diploma-level regional training institution (REPAHA) was established and jointly operated by the participating countries.

34. Some innovations from education sector projects benefitted other sectors. A very creative approach was successfully adopted in the first Guyana project: this was to bolster the domestic construction industry. Since local firms were too small to undertake individually any of the project construction works, assistance was extended to form a construction cooperative. Not only that proved to be very successful for the purpose of the project, it also enhanced the development of the local construction industry. That specific development was actually emulated by other firms. Other representative and diverse forward-looking actions were incorporated in the design of various projects such as:

- using project multilateral schools for part-time vocational training (Guyana, first project);

- creating a mobile supervision unit until a sufficient number of supervisors had been trained (Haiti, first project);

- studying the economics and use of local materials and school building techniques (Guyana, first project);

- introducing mobile training units for farmers and extension agents (Trinidad and Tobago, second project).

35. In summary, while a number of innovative ideas were introduced with the projects, less creativity was demonstrated in trying to address the resource constraints that were emerging in financing the expansion of the education system and the qualitative improvements. Measures to improve internal efficiency and especially cost-recovery initiatives were not given sufficient prominence. Finally, despite the great homogeneity in the education, economic, and socio-cultural environment in the region, there appeared to be limited cross-fertilization of ideas and initiatives tried out in various projects.

Institution Building

36. Developing institutional capacities, forming management, administrative and other technical skills, and molding new systems and processes that not only sustain a project following completion but make a permanent contribution to the development and viability of the sector, are all additional objectives of development lending. Almost every aspect of project design must be evaluated from that perspective, so that subsequent investments reinforce previous actions and deepen institution building. From

any angle, the potential for institution building is not only immense but imperative. Some examples include:

- the more project-specific items such as the educational and training institutions themselves, related management and skill development, supervisory and administrative capacities;

- implementation capacities, starting with the units responsible for the realization of the projects, architectural and construction inputs, and procurement capacities;

- new systems and processes introduced with the project but affecting the sector at large, such as planning and curriculum development capacities, education testing services, textbook preparation and development.

37. All education projects (with the exception of the third operation in Trinidad and Tobago) had some far-reaching impact on the quality of education and the development of institutions to sustain the effort. Impetus was given to the development of curriculum development units in all countries, the writing of teacher manuals and student primers, and the development of some systems and procedures for student testing. Progress in institution building varied among countries, partly depending on their commitment to reform and partly on the resources that were required to sustain the effort.

38. In many countries, concepts introduced through the projects affecting various aspects of the management of the system were institutionalized. Examples of this include the reorganization and expansion of administrative services and the institutionalization of new education services in the Department of Education, under the first project. Also in Haiti, the developing competence of the project implementation unit was tapped to manage implementation of school construction for the whole country. School supervisory services were also substantially developed in most countries.

39. However, unless institution building is viewed in the context of project design as an end in itself and appropriate allowances are made, it cannot be successful. A characteristic example is the procurement services for furniture and equipment for the projects. Expediency appears to have been the underlying goal in most of the projects, not the development of local capacity to handle this repetitious activity. Procurement agents were frequently hired on technical assistance to undertake the project procurement tasks. Even where it was noted that such interventions were relatively successful, such as in the Bank's third project in Haiti, the lack of counterpart development was cited as a negative dimension in implementation since the longer term institutional needs of the concerned ministry in this area were not addressed.

40. Perhaps the most disappointing experience is the problems and discontinuities that developed in building project implementation capacities. Despite the Bank's long and continuous involvement in countries, project management problems and weaknesses continued to be a major contributing factor to costly implementation delays. Arrangements for project implementation simply did not stand up over time and frequent staff turnover upset working relationships and introduced inexperienced individuals in

tasks for which they were not prepared. Institution building requires continuity over time that extends beyond the immediate needs of a single project. An exception to that was the very successful establishment of the project unit for the first project in Haiti. It was decided to use it for the construction of all schools in the country.

41. To what extent were project institution building objectives met? To the extent that the education/training system expanded its physical infrastructure and, therefore, its enrollment capacities and introduced curricula with greater external efficiency, it can be argued that major sector institution building took place. Many constructive steps were also taken in a number of other situations, ranging from improving technical training and system supervision to introducing testing and instructional television, as was done in the second Jamaica project. However, financial constraints forced a scaling down of many of these efforts and/or undermined their full potential impact across the region. Other institution development objectives, though, such as creating capacities for textbook development, a goal of the first project in Jamaica and of the second project in Haiti, were not met because of administrative and financial constraints. Neither was Jamaica's attempt successful under the first project to establish a Department of Statistics and Planning in the Ministry of Education.

Policy and Issues Dialogue

42. Under the Cooperative Program that existed at that time between the Bank and UNESCO, an education sector report with an identification of a project was prepared by UNESCO for many of the countries to which Bank/IDA education lending was programmed. These reports became the basis for discussions with governments on policies regarding access to education, the quality of education and teacher training, external and internal efficiency, sector priorities, the investment program, and the management at large of the education system. Project identification was either a joint Bank/UNESCO or Bank task. Once agreement on project composition was reached, usually a UNESCO team would be asked to assist the government in the preparation of the project for appraisal. In the cases, therefore, that UNESCO was involved in the sector and project identification work, authorities would discuss a number of policy and other education sector issues with both the Bank and UNESCO staff.

43. There were varying degrees of effectiveness in the policy dialogue between the Bank and the Borrowers. The cases where the Bank's contribution bore specific beneficial impact were characterized by a political consensus at the top and professional interaction on education issues, which was devoid of political pressure for premature action. In such cases, the project designs were sound and the advance preparation and concurrence within the government and with the Bank paid off handsomely. Similarly, where policy matters and issues were discussed from the preparation stage on with the same key staff of participating institutions, the dialogue was very effective and of a problem-solving nature. Many of these conditions highlighted the first operations in Guyana and in Haiti.

44. But this situation was not always prevalent. In the case of Jamaica and, most notably, in Trinidad and Tobago, the authorities were involved in extensive internal discussions for a substantial restructuring of the education system while Bank projects were being implemented. There was not effective strengthening of the

supervision missions or other sector missions to ensure that adequate Bank expertise was available to discuss the emerging new ideas for the education system as well as their implications. In the third operation in Trinidad and Tobago, a project redesign approval was given expeditiously to improve Bank/country relations. This had deleterious effects on project implementation.

45. One of the major weaknesses in the Bank/Borrower dialogue was with regard to the issues of the staffing of project units, appointment of counterpart staff, and selection and acquisition of sites. There was reluctance on the part of the Bank in many cases to push hard for satisfactory solutions. Problems dragged on for months and years, inevitably hurting the project and the attainment of its objectives. In the case of the second project in Jamaica, for example, there was no pressure on the authorities from the Bank to address the understaffing of the project unit. In the absence of an effective unit, the Bank's supervision missions focused on urgent problem solving. The support of the Bank was in effect deflected from the wider educational effort in the country.

46. What are some of the major lessons for the future? How might the Bank become more effective in assisting the Caribbean countries in the education sector? The regional report, "Access, Quality, and Efficiency in Caribbean Education," and the Bank's experience in the sector, suggest three major lessons to guide future lending:

Education Finance

(i) there is considerable scope for improving the management and financing of education in the Caribbean to address the problems of access, quality and efficiency. However, resources for education have been declining in relative terms in most countries since the early 1980s and this trend must be reversed. Past projections of Government resources for education projects might have been overly optimistic. However, the reason might have been partly due to the inability of education officials to make a strong enough case for important education programs. The declining share of funding for education needs to be addressed with strong arguments as to the sector's efficiency and effectiveness. Thus, in preparing future sector investments, greater attention must be given to issues of education finance, particularly to ensure adequate funding to sustain programs for improving educational quality.

Institution Building

(ii) the Caribbean countries are small and have severe human resource constraints; these constraints are made even more severe by the migration of skilled professional and technical personnel. The experience of the past decades confirms the extreme difficulty of institution building and of sustaining project benefits. As a consequence, institution building and training must continue to be a prominent feature of external assistance, with a major goal of enhancing local capacity for making informed decisions and transforming them into operational programs. The lesson from past failures is not to try again, but to do something differently and better the next time. More attention needs to be given to managing educational change at all levels of the system. Ministries of education in the Caribbean, as elsewhere, are notoriously resistent to change; thus initiatives for change should be encouraged and supported at the level of the school and community.

School Facility Improvements

(iii) despite substantial investments in school facilities during the past decades, many schools in the Caribbean are seriously overcrowded and in poor condition. As a consequence, school environments are not conducive to learning and undermine other investments in teachers and instructional materials aimed at improving educational quality. Future investments in educational quality should incorporate needed improvements in the educational environment.

A WAY FORWARD

This Annex derives from the Consultation between senior Government Officials, regional education experts, and representatives of donor agencies held in Antigua on 25-26 February 1992.[1] The purpose of the Consultation was to:

(a) study the findings and recommendations contained in the World Bank Study on "Access, Quality and Efficiency in Caribbean Education";

(b) inform the analyses and data base of the report using the experienced judgements of educators who have worked closely at all levels of the education systems across the caribbean; and

(c) realign the recommendations so as to:

  (i) exploit the experiences and initiatives being attempted in various Caribbean institutions and countries; and

  (ii) define the projects whose major parameters are motivated through the cultural expressions of the Caribbean.

The Consultation began with a clear appreciation of the fact that responsibility for policy-making in education within the Caribbean Community lies with the standing Committee of Ministers responsible for Education (SCME) and therefore any major initiative requiring regional implementation must be approved by this body.

The SCME, concerned about the shortcomings in the education system, decided that a systematic, intensive and sustained process of regional consultation about the future of education in the Region should be undertaken to assess present and future educational arrangements and concerns. This activity, initiated in the First Consultation on the Future of Education in the Caribbean, has been systematically carried out by the CARICOM Advisory Task Force on Education which has harnessed Caribbean intellectual power towards researching, analyzing and recommending options for education in the Region.

This process approach is considered essential to a better understanding of the causes of the shortcoming of the system and to formulate interventions, possible and necessary, according to the kind of society envisaged for the Caribbean.

At the sub-regional level, the OECS education Reform Working Group in 1991, through a very "grass-roots" process of consultation, crafted the OECS Education Reform Strategy "Foundation for the Future". This was endorsed by OECS Ministers of Education and approved by OECS Heads of Government in 1992 as the center piece in any negotiation with the donor community for funding for OECS regional programs and projects.

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[1] Prepared by the Caribbean Community Secretariat with inputs from the OECS Secretariat and the CARICOM Advisory Task Force on Education.

The two processes of consultation at the regional and subregional levels seek to create a holistic vision of Caribbean society and to determine what comprehensive set of interventions need to be made.

The Antigua and Barbuda Meeting concluded that the World Bank study on "Access, Quality and Efficiency in Caribbean Education" with a focus that is economic and financial, constituted a substantial input into the formulation of a regional strategy for human resources development. Given the context of the broader perspectives which inform the work of the CARICOM Advisory Task Force and the OECS Reform Strategies, much work remains to be done to articulate the World Bank study into the wider regional processes and to achieve a holistic approach to human resource development.

In particular, the process needs to draw on certain initiatives scattered across the Caribbean, in small and large island states, which contain useful insights on some salient principles that make for cultural syntheses and allow education to reflect the whole life of a community viewed from special standpoints. These insights laboriously culled from the successes and failures of national sub-regional and regional strivings serve as bedrock.

This Annex represents a consensus on the procedural steps to be undertaken in setting forth an education strategy that has high potential and generative power to contribute to the process. It delineates important regional initiatives presently underway to improve the quality of education; focuses on the symbiosis between the regional initiatives and the experiences and strivings within sub-regional and national boundaries; identifies critical problems for analysis; and recommends ways of resourcing existing institutions (in terms of persons, ideas, and methodology) which would enable them to complete the tasks expeditiously and rationally.

"A Way Forward" is expected to build on the many important initiatives already underway (using, refining and perfecting the methodologies that produced the driving force) in order to help formulate a human resource development strategy for the Caribbean. The strategy seeks among other things, to maximize the contribution which the education system can make to economic and social development. In this context, the World Bank Study provides an effective, timely situation analysis which has enabled the Consultation to identify the following priority areas for future action:

(a) Early completion of specific problems which were recommended for further study and definition.

(b) (i) Review of current initiatives associated with education reforms and human resource development within Caribbean countries.

(ii) Rationalization of work of the CARIBOM Advisory Task Force, expanding terms for reference, preparing detailed work plans and costing and assigning responsibility for follow-up actions.

(c) Expansion of the context in which the policy review is being undertaken.

I. Areas for Further Study

(a) Evaluation Research and Institutional Capacities

Through the Caribbean Region, limited institutional capacity exists for continuous evaluation of, an research on, the education sector's performance. In particular, the annual examinations of the Caribbean Examinations Council in about 35 subject areas furnish a wealth of data which have been barely explored. A crucial first step towards generating enhanced capacities and capabilities in monitoring and evaluating the performance of education systems will require improvement in the quality of national education data. An essential corollary is upgrading national skills in order to assess access to, and equity of, educational opportunities at all levels, and to participate in evaluating the quality and efficiency of the educational system.

Expanded educational research, particularly applied research, is recognized as crucial to identify those factors which can improve educational performance. The essential data base of research is careful documentation of educational experiences, such as the benefits of pre-school education and identification of least cost approaches to increase access. Most existing test instruments have been designed as screening devices for selection of students for limited secondary education streams and are not intended to measure academic achievement nor measure skills/aptitude levels. However, a few countries have already instituted innovative approaches to student testing which contain high potential for development.

Again, in one or two countries, there is emerging an assessment framework that supports a model of teaching within (schools) institutions which ensures that each individual has a variety of opportunities to acquire skills (Knowledge, Abilities, Skills, Attitudes) necessary for leading the good life; and that the provision of these opportunities must be flexible in terms of age, time, and space. In order to build on such initiatives, ways and means of networking and interchanging information and expertise should be found and directed towards developing national assessment capability.

A principal challenge is for the Region to define and establish bench marks for performance in primary and secondary schools using the experiences of national systems under the leadership of CARICOM, CXC, UWI and UG. These abilities will be invaluable in guiding curriculum development in driving textbook production, and in supporting teacher training and informing the level and quality of tertiary and university education. Concomitantly, careful attention must be given to developing good indicators of effective schools, over and beyond cognitive tests (achievement tests), which would facilitate monitoring effectiveness and efficiency of education programs and interactions.

The Consultation recognized the importance of building regional capacity to carry out priority research. A major priority for research in institutions such as the UWI's Faculty of Education, the University of Guyana, the CXC, CARNEID, Teachers' Colleges and Ministries of Education will be to evaluate the potential for replicating promising initiatives within the Region. These institutions will be encouraged to design interventions which utilize teachers more creatively as active participants in research, and increase more creative use of the classroom and testing.

(b) Educational Materials

Given the severe under-resourcing for educational materials of all types, further work is needed to support the work being done by UNESCO/CARNEID/CARICOM, on the best modalities for supplying materials such as text books, work books, educational toys and aids, classroom equipment and science equipment. Current publishing procurement and distribution systems will be analyzed as will potential book loan schemes. The constraints of small size and limited markets suggest greater cooperation in procurement and distribution practices can help attain economies of scale.

The Consultation emphasized the importance of developing a common core curriculum to facilitate more efficient procurement of educational materials. While the CXC already provides for some degree of standardization at the secondary level, further standardization and identification of core curricula is also necessary at the primary level. The Consultation also noted that the supply and maintenance of equipment for science laboratories was problematic, and therefore emphasized the need for review of the science curriculum and design of alternative approaches to the teaching of science. Opportunities for enhanced use of radio and television for both school and continuing education for life long learning also need to be studies in light of new low-cost communications technologies and new distance learning techniques. The experiences of the UWI and other countries in providing distance education should be analyzed for their replicability.

(c) Continuing Education

Priorities for continuing education identified during the Consultation included second-chance program for school dropouts, special education for exceptional children (disabled and gifted), pre-school education, in-service teacher training, foreign language training, music and the arts, retraining and skills upgrading of adults, and bridging courses to allow late entry into tertiary education. Expanding access to these type of programs requires determination of whether existing schools and colleges can be used more efficiently to respond to such needs. Legal and administrative barriers such as over-stringent entry requirements need to be examined with a view to providing maximum flexibility for those wishing to upgrade skills or -re-enter the labor market.

II. Rationalization of Work and Assigning Follow-up Responsibilities.

The CARICOM Advisory Task Force on Education was appointed in April 1990 by the Secretary-General, Caribbean Community (CARICOM) in an effort to extend and deepen the work initiated at the November 1989 Consultation on the Future of Education in the Caribbean. The Task Force was mandated to continue and extend the thinking and analysis, begun at the First Regional Consultation on the Future of Education in the Caribbean; and distill from the work and the consultations undertaken, outcomes and recommendations for consideration by policy-makers.

In addition, an OECS Education Reform Working Group was established in March 1991, on the basis of wide consultations with education officials, the private sector, and community and interest groups. Its report, "Foundation for the Future", details reform strategies for: harmonization of the education systems in the subregion; the delivery of improved services at the early childhood, primary, secondary and tertiary levels; and improvements in conditions of service for teachers. It also provides recommendations for improved management and administration and proposals for financing the systems.

A CARICOM Working Group has recently developed a regional strategy for Technical and Vocational Education and Training in the Caribbean. Its work has recommended closer relationships between education and the private sector, suggested the development of a Labor Market Information System and prepared detailed proposals for better coordination and management of technical and vocational education and rationalizing the use of existing resources.

The Consultation urged that high priority be assigned to follow-up work which flows from the World Bank Report and the unfinished agenda of the CARICOM Advisory Task Force. To this end, the Terms of Reference of this Task Force should be reviewed and rationalized, new responsibilities assigned and a work program developed and approved to take account of earlier initiatives and the recommendations of the Consultation thus providing for expeditious completion of a comprehensive regional strategy for human resources development.

UNDP indicated willingness to support this work bearing in mind the expressed continuing interest of donors in assisting a comprehensive regional human resources development program. Early completion of the work envisaged would assist the region more effectively to coordinate donor activities, integrate these activities with national and regional programs, and maximize the use an effectiveness of available and projected resources.

The Consultation noted and appreciated the extensive support which the donor community has provided to the education sector in the Caribbean. In particular it recognized the major regional effort of the Canada/UWI Institution Strengthening Project and interventions supported by the World Bank, IDB, BDD, USAID, UNESCO, UNICEF and UNDP in areas such as education, administration, technical and vocational education and training, and meeting basic learning needs.

III. Expansion of the Context of the Education Policy Review

The linkages between human resource development, education and economic development need to be further articulated to take account of parallel work undertaken within the framework of the West Indian Commission. Further reflection on the economic future of the Caribbean should be undertaken in order to provide focussed guidance on future responsibilities for the education sector.

This guidance can only emerge from a clearer understanding and appreciation of the major problems facing the region in the future and the likely direction of new investments.

Some of the region's problems include the accelerating rate of environmental degradation, the increasing burden of debt, and growing poverty. These problems impose additional, more complex challenges to improve the quality of the human resources base through improved delivery of educational services. Critical reforms in the public sector will require greater numbers of skilled professionals to devise and implement new techniques of management based upon increased decentralization and greater public participation.

At the same time, sustaining the benefits of economic growth will require greater commitment to research in areas for likely future investments such as marine sciences, tourism, agriculture and the service industries. this raises the concomitant need for increasing numbers of skilled personnel in these fields.

The meeting urged that there should be closer collaboration between Ministers of Finance, who mandated the Study of the World Bank on "Access, Quality and Efficiency in Caribbean Education" and Ministers of Education who have responsibility for policymaking in education. It was also noted that in order to obtain the critical inputs of Ministers of Education, the study would be laid for consideration before the Ninth Meeting of the Standing Committee of Ministers responsible for Education to be held May 18-22, 1992 in St. Kitts and Nevis.

The best case for human resource development can be made only when the important actors at all levels have been consulted on their vision for the future.

STATISTICAL APPENDIX

(i) REFERENCES FOR EDUCATION EXPENDITURE TABLES

(ii) TERTIARY EDUCATION TABLES: A-1 TO A-23

(iii) HIGHER EDUCATION TABLES: A-24 to A-47

(i) References for Education Expenditure Tables

Data on expenditure were sought from a wide variety of sources. While not exhaustive the main references are listed below. Tables for individual countries are in the project files.

OECS:

Caribbean Development Bank (1989) Central Government Financial Statistics of the Lesser Developed Countries 1983-88.

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World Bank (1988) Jamaica: Summary Review of the Social Wellbeing Program.

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Central Bank of Trinidad (1990) Annual Economic Survey 1989.

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World Bank internal documents.

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Table A-1: APPROXIMATE UNIT SIZES OF TERTIARY AND OTHER POST SECONDARY INSTITUTIONS

	TERRITORY	Sixth Forms	Community Colleges	Teachers Colleges	Skills Centers	Adult Ed. Centers	UWI Centers	Hotel Schools	National Polys	Agri. Schools	Nursing Schools
1	Anguilla	20	-	-	-	100	-	-	-	-	-
2	Antigua/Barbuda	-	540	-	240	-	400	200	-	-	75
3	Bahamas	-	1,700	-	300	-	-	1,700	-	-	100
4	Barbados	125	2,000	150	400	60	3,000	-	1,700	-	100
5	Belize	50	300	200	200	50	120	-	-	100	75
6	British Virgin Is.	-	60	-	60	-	-	-	-	-	-
7	Dominica	-	300	60	700	100	200	-	-	-	75
8	Grenada	-	1,900	-	250	-	200	-	-	-	75
9	Guyana	150	-	180	160	250	-	-	2,500	200	100
10	Jamaica	150	1,700	400	6,000	200	200	-	4,900	250	100
11	Montserrat	30	-	-	-	-	200	-	120	-	75
12	St. Kitts-Nevis	-	360	-	250	100	200	-	-	-	75
13	St. Lucia	-	750	-	800	100	150	-	-	-	75
14	St. Vincent	150	-	120	300	100	300	-	200	-	-
15	Trinidad/Tobago	150	-	250	200	300	-	-	2,000	100	100

Sources: Study estimates based on discussions with ministry officials and institutions' enrollment figures

Table A-2: DISTRIBUTION OF TERTIARY ENROLLMENTS - ENGLISH SPEAKING COUNTRIES

	Territory	Year	Academic ('A' level)		Teachers College		Tech./Voc.		Total
			Number	Percent	Number	Percent	Number	Percent	
1	Anguilla	1988	15	100.0	-	-	-	-	-
2	Antigua/Barbuda	1989	150	28.6	48	9.2	326	62.2	524
3	Bahamas	1986	600	14.3	200	4.8	3,400	81.0	4,200
4	Barbados	1986	900	20.5	250	5.7	3,250	73.9	4,400
5	Belize	1987	270	20.2	235	17.6	830	62.2	1,335
6	British Virgin Is.	1989	20	33.3	-	0.0	40	66.7	60
7	Dominica	1989	152	40.4	60	16.0	164	43.6	376
8	Grenada	1989	192	35.6	105	19.4	243	45.0	540
9	Guyana	1985	440	12.1	600	16.5	2,600	71.4	3,640
10	Jamaica	1984	4,000	26.7	3,800	25.3	7,200	48.0	15,000
11	Montserrat	1989	25	26.3	0	0.0	70	73.7	95
12	St. Kitts-Nevis	1989	122	33.5	57	15.7	185	50.8	364
13	St. Lucia	1989	232	33.0	220	31.3	250	35.6	702
14	St. Vincent	1989	152	37.6	43	10.6	209	51.7	404
15	Trinidad/Tobago	1987	4,300	47.3	800	8.8	4,000	44.0	9,100
	TOTAL		11,570	28.4	6,418	15.8	22,767	55.9	40,740

Source: Ministries of education for year stated

Table A-3: ENROLLMENT OF NON-NATIONALS AT COLLEGE OF ARTS SCIENCE AND TECHNOLOGY BY FIEL OF STUDY, 1988

Field Enrollment	
Building	50
Commerce	36
Computing	3
Engineering	17
Technical Education[a]/	24
Institutional Management Food Science Science	7
Total	149

a/ includes part-time degrees.

Source: CAST (1988)

Table A-4: TERTIARY LEVEL EDUCATION TUITION AND OTHER CHARGES (US$ p.a.)

Territory	"A" Level/Associate Degree		Technical-Vocational		Teachers' College		Adult Education	
	Tuition	Other a/	Tuition	Other a/	Tuition	Other a/	Tuition b/	Other b/
1 Anguilla	F	400	n.app.	n.app.	n.app.	n.app.	100	50
2 Antigua/Barbuda	F	400	60	100	F	100	100	50
3 Bahamas	400-4000	400	400	100	400	100	200	50
4 Barbados	F	400	F	150	F	100	300	50
5 Belize	150-700	450	150	200	F	100	200	50
6 BVI	300	200	n.app.	n.app.	n.app.	n.app.	250	50
7 Dominica	F	400	40	100	F	100	100	50
8 Grenada	250	400	250	100	F	100	100	50
9 Guyana	F	400	F	100	F	100	100	50
10 Jamaica	F	500	60	200	F	100	100	50
11 Montserrat	F	400	100	100	n.app.	n.app.	100	50
12 St. Kitts-Nevis	F	400	100	100	F	100	100	50
13 St. Lucia	30	400	125	100	20	100	100	50
14 St. Vincent	F	400	40	100	F	100	100	50
15 Trinidad/Tobago	F	400	F	100	F	100	100	50
16 Turks and Caicos	F	F	n.app.	n.app.	n.app.	n.app.	150	50

Note: F denotes free tuition.

a/ Includes costs of books, examination fees, college fees, clothing, transportation (not boarding fees).
b/ Includes all of (a); based on students taking between 1-2 subjects part-time.

Sources: Ministry of education officials and heads of institutions, all estimated

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Table A-5: STUDENT ENROLLMENT IN SELECTED SUBJECTS: COLLEGE OF ARTS, SCIENCE AND TECHNOLOGY, JAMAICA (1984-85)

	Total Enrollment		
	Male	Female	% Female
Building	369	45	10.8
Commerce	526	735	58.3
Computing	27	45	62.5
Engineering	563	16	2.7
Technical Education	135	187	58.0
Science	110	143	56.5

Source: Ellis (1990)

Table A-6: DISTRIBUTION OF POPULATION OF WORKING AGE BY EDUCATIONAL ATTAINMENT BY COUNTRY, 1980-81

	Level of Education (Percentages)					
	None	Nursery	Primary	Secondary	University	Other
Bahamas	4.4	0.4	42.4	42.1	8.2	24.0
Barbados	0.3	0.1	42.0	50.7	3.7	32.0
Belize	5.8	2.3	73.0	14.3	1.6	30.0
Dominica	3.2	0.2	77.7	16.2	1.7	11.0
Grenada	1.1	0.1	75.2	20.4	1.9	08.0
Guyana	4.7	0.2	66.9	23.9	1.4	27.0
St. Lucia	8.1	1.5	70.6	17.7	1.0	12.0
St. Vincent	1.1	0.1	77.5	19.2	0.9	12.0
Trinidad & Tobago	3.5	-	58.4	35.5	2.4	22.0

Source: Derived from Henry (1988)

Table A-7: TEACHER TRAINING ENROLLMENTS
SELECTED COUNTRIES: 1970, 1980, and 1989

	Territory	1970	1980	1989	Percent Changes 1970-80	Percent Changes 1980-89	1970-89
1	Antigua/Barbuda	38	89	48	134	-46	26
2	Bahamas	...	200	200	..	0	..
3	Barbados	224	256	76	14	-70	-66
4	Belize	...	255	234	..	-8	..
5	Dominica	...	16	20	..	25	..
6	Grenada	79	91	105	15	15	33
7	Guyana	330	551	577 ('87)	67	5	75
8	Jamaica	886	4,016	3,044 ('87)	353	-24	244
9	St. Kitts-Nevis	28	98	57	250	-42	104
10	St. Lucia	103	66	220	-36	233	114
11	St. Vincent	50	83	43	66	-48	-14
12	Trinidad/Tobago	710	2,027	755	185	-63	6
	TOTAL	2,448	7,748	5,379	217	-31	120

Source: UNESCO (1985); UNESCO sector surveys (1981/6); study estimates for 1989.

Table A-8: OUTPUT FROM TEACHERS' COLLEGES: SELECTED YEARS

	Country	Year	Primary/ Secondary a/	Technical- Vocational b/, c/
1	Antigua/Barbuda	(1989)	18	4
2	Bahamas	(1986)	100	...
3	Barbados	(1989)	48	4
4	Belize	(1988)	48	2
5	Dominica	(1989)	8	5
6	Grenada	(1989)	24	6
7	Guyana	(1987)	250	2
8	Jamaica	(1987)	769	77
9	St. Kitts-Nevis	(1989)	15	4
10	St. Lucia	(1989)	35	5
11	St. Vincent	(1989)	33	5
12	Trinidad/Tobago	(1987)	256	65
	TOTAL		1,604	179

a/ Statistics available do not distinguish between primary and secondary.

b/ Based on average of 1986-88 output (CAVET, 1989).

c/ Training carried out mainly in Jamaica and Trinidad, not nationally.

Source: UWI Faculty of Education and UNESCO sector surveys (1981/6).

Table A-9: DEMAND AND SUPPLY OF TEACHERS IN INFANT, PRIMARY, ALL-AGE, AND SECONDARY SCHOOLS: JAMAICA (1984/85 - 1986/87)

	1984/85	1985/86	1986/87
Demand			
Total Teacher Demand	18,316	17,925	18,047
Supply			
Stock of qualified teachers from previous year	16,243	16,168	16,149
New qualified entrants (from previous year)			
J.B.T.E.	847	1,101	601
UWI Dip. Ed	31	10	30
Wastage (qualified teachers leaving the profession)	-953 (8.4%)	-1,130 (6.5%)	-548 (3.3%)
Total supply	16,168	16,149	16,232
Shortfall			
Total demand - total supply	2,148	1,776	1,815

Source: Ministry of Education, Jamaica.

Table A-10: PASSES AT 'A' LEVEL FOR SELECTED SUBJECTS SELECTED COUNTRIES (percent), 1982

Country	Physics	Chemistry	Biology	Math
Barbados	60.2	48.0	51.2	65.4
Jamaica	37.7	47.0	50.8	44.5
Trinidad	53.0	51.0	46.8	64.4
Other Caribbean	41.0	36.9	35.1	48.2
Singapore	70.8	86.1	72.1	88.5

Source: Henry (1988).

Table A-11: 'A' LEVEL PERFORMANCE OF CARIBBEAN STUDENTS (1986)

No. Students	Subjects					
Passing with	0	1	2	3	4	TOTAL
	2,204 (38.4%)	1,592 (27.8%)	1,089 (19.0%)	808 (14.1%)	40 (0.7%)	5,733 (100%)

Source: University of Cambridge Local Examination Syndicate (1986).

Table A-12: ESTIMATED OUTPUT OF STUDENTS WITH 2 OR MORE A-LEVELS: BY COUNTRY, 1990

	Territory	No. Gaining 5+ CXC "Passes" (1990) a/	% of Regional Total Gaining 5+ passes b/	Estimate 2+ "A" Level Output (1990) c/	No. of Original Age-Cohort Gaining 2+ "A: levels
1	Anguilla	5	0	2	1.0
2	Antigua/Barbuda	59	1	26	2.3
3	Barbados	386	8	158	2.5
4	Belize	49	1	20	0.3
5	Dominica	56	1	24	1.0
6	Grenada	46	1	20	0.6
7	Guyana	182	4	74	0.5
8	Jamaica	1,228	25	500	0.8
9	Montserrat	16	0	6	3.0
10	St. Kitts-Nevis	53	1	22	1.8
11	St. Lucia	189	4	78	2.3
12	St. Vincent	81	2	34	1.4
13	Trinidad/Tobago	2,555	52	1,040	4.2
	TOTAL	4,905		*2,005	

* Estimate.

a/ Derived from CXC (1990).
b/ Derived from national output (a)/regional total.
c/ 1989 figure (1,937) projected to 1990 (2,004); national output = (b) x 2,004.

Source: Study estimates; validated by a sample of national figures for 1990.

**Table A-13: GRADUATION AND REPETITION RATES
EASTERN CARIBBEAN TEACHERS' COLLEGES
ACCUMULATED NUMBERS (1984-88)**

Country	Referrals (1)	Graduates (2)	Ratio (1)/(2)
Antigua Barbuda	193	101	1.91
Barbados	417	274	1.52
Grenada	283	134	2.11
Dominica	156	65	2.40
St. Kitts-Nevis	137	92	1.49
St. Lucia	411	264	1.56
St. Vincent	508	202	2.51
Overall	2,105	1,132	1.86

Source: King (1989).

**Table A-14: CARIBBEAN EXAMINATION COUNCIL PASS RATES FOR
SCHOOL AND PRIVATE CANDIDATES, 1989 (percent)**

Group	Mathematics	English	Principles of Business
Secondary School Students	26	30	43
Private Candidates	13	13	43

Note: Pass rates are defined as being general proficiency, grades I and II.

Source: CXC (1989).

Table A-15: CERTIFICATION AND VALIDATION OF TERTIARY LEVEL PROGRAMS

Type of Program	Certification	Validation/Accreditation
'A' level	GCE Cambridge and London	UWI, UG, UK and N. American Universities
Associate Degree	national institutions (MoE)	Various universities
Teacher Education (general)	national institutions (MoE)	UWI, UG, other universities
Teacher Education (technical)	national institutions (MoE)	UWI, UG, CAST
Technician and Craft Programs	national institutions CGLI, RSA, LCC	UWI, UG, CAST, overseas institutions
Nursing and Allied Health	National General Nursing Council (MoH)	UWI, UG, CAST, overseas institutions
Agriculture Programs	national institutions (MoAg)	UWI, UG, CAST, overseas institutions
Youth Skills Training	national institutions (MoE, MoCD, NTB, NGOs)	national tertiary institutions
Apprenticeship Schemes	NTBs etc, employers	national tertiary institutions, employers
Adult and Continuing Education	CXC, national institutions	national tertiary institutions
Hotel and Tourism Training	AHMA, national institutions	UWI, overseas institutions

Code: MoE = Ministry of Education
MoH = Ministry of Health
MoAg = Ministry of Agriculture
MoCD = Ministry of Community Development
CGLI = City and Guilds Institute
RSA = Royal Society of Arts
NTB = National Training Board
CXC = Caribbean Exams Council
AHMA = American Hotel and Motel Association

Table A-16: RECURRENT PUBLIC EXPENDITURE ON TERTIARY EDUCATION 1970 AND LATEST YEAR: SELECTED COUNTRIES (US$000,000.00)

Country	1970	Latest Year	% Change
Antigua	55	643 ('86)	1,069
Barbados*	668	6,368 ('87)	853
Belize	214	1,244 ('87)	481
Dominica	13	396 ('87)	2,946
Grenada	82	473 ('87)	477
Guyana*	16	549 ('87)	3,331
Jamaica*	331	21,400 ('88)	6,365
St. Kitts-Nevis	24	369 ('87)	1,438
St. Lucia	49	1,076 ('87)	2,096
St. Vincent	46	519 ('87)	1,028
Trinidad	627	5,628 ('87)	798

Note: 1. Expenditure at 1990 conversion rates.
2. These figures do not include sixth forms provision.

* includes expenditure on higher education.

Source: Knapp (1976), OECS/DHV (1988), Commonwealth Secretariat (1990b), IDB (1988)

Table A-17: UNIT COSTS OF TERTIARY EDUCATION AS A PROPORTION OF PER CAPITA INCOME: CARIBBEAN COUNTRIES

Country	Unit Cost/GNP per Capita (percentage)
Antigua	77
Bahamas	22
Barbados[a]/	30
Belize	48
Dominica	102
Dominican Rep.[b]/	18
Grenada	75
Guyana[b]/	711
Haiti[b]/	112
Jamaica	53
St. Kitts-Nevis	71
St. Lucia	113
St. Vincent	155
Surinam	87
Trinidad[a]/	56
Median	75
Anglophone Africa[b]/	920
South Asia[b]/	119
East Asia[b]/	118
Latin America[b]/	88

a/ For major community colleges only in Barbados and technical institutes only in Trinidad.
b/ University level included.

Source: Appendix cost tables; Mingat and Tan (1986)

Table A-18: PROPORTION OF CXC ENTRY GAINING 5+ PASSES BY COUNTRY, 1990

	Territory	Number gaining 5+ CXC passes (1)	Total CXC Entry (2)	$\frac{(1)}{(2)} \times 100$
1	Anguilla	5	90	5.6
2	Antigua/Barbuda	59	728	8.1
3	Barbados	386	5,184	7.4
4	Belize	49	1,482	3.3
5	British Virgin Is.	4	168	2.4
6	Dominica	56	780	7.2
7	Grenada	46	1,401	3.3
8	Guyana	182	6,210	2.9
9	Jamaica	1,228	22,229	5.5
10	Montserrat	16	152	10.5
11	St. Kitts-Nevis	53	548	9.7
12	St. Lucia	189	1,607	11.8
13	St. Vincent	81	1,423	5.7
14	Trinidad/Tobago	2,555	27,694	9.2
15	Turks & Caicos	3	146	2.1
	TOTAL	4,912	69,842	7.0

Source: CXC (1990)

Table A-19: PROPORTIONS OF STUDENTS GAINING SPECIFIED CXC PASSES BY COUNTRY (1990)

	Country	No. 4+ Passes (1)	No. 3+ Passes (2)	Total Entry (General Only) (3)	Total Entry (General + Basic) (4)	Ratio 3/4 %	Ratio 1/3 %	Ratio 2/3 %	Ratio 1/4 %	Ratio 2/4 %
1	Antigua	83	113	221	728	30	38	51	11	16
2	Anguilla	7	12	24	90	27	29	50	8	13
3	Barbados	536	738	2,673	5,184	52	20	28	10	14
4	Belize	72	114	464	1,482	31	16	25	5	8
5	BVI	5	7	23	168	14	22	30	3	4
6	Dominica	105	158	663	780	85	16	24	13	20
7	Grenada	87	154	1,016	1,401	73	9	15	6	11
8	Guyana	294	502	3,933	6,210	63	7	13	5	8
9	Jamaica	1,967	3,206	18,254	22,229	82	11	18	9	14
10	Montserrat	21	29	56	152	37	38	52	14	19
11	St. Kitts-Nevis	70	83	258	548	47	27	32	13	15
12	St. Lucia	260	322	989	1,607	62	26	33	16	20
13	St. Vincent	136	230	1,244	1,423	87	11	18	10	16
14	Trinidad/Tobago	3,594	4,990	19,374	27,694	70	19	26	13	18
15	TCI	3	3	32	146	22	9	9	2	2
	Total	7,240	10,661	49,224	72,854	68	15	22	10	15

Note: Pass denotes grade I or II General Proficiency.

Source: CXC statistics 1990

Table A-20: TOTALS OF SECONDARY SCHOOL LEAVERS BY NUMBER OF CXC PASSES, BY COUNTRY, 1990

	Territory	No. with 1-3 passes	No. 3+ passes	No. 4+ passes	No. 5+ passes
1	Antigua/Barbuda	117	113	83	59
2	Anguilla	14	12	7	5
3	Barbados	1,130	738	536	386
4	Belize	278	114	72	59
5	BVI	10	-	-	4
6	Dominica	269	158	105	66
7	Grenada	530	154	87	45
8	Guyana	1,435	502	294	182
9	Jamaica	8,100	3,206	1,967	1,228
10	Montserrat	24	29	21	16
11	St. Kitts-Nevis	121	83	70	53
12	St. Lucia	355	322	260	189
13	St. Vincent	630	230	136	81
14	Trinidad/Tobago	7,741	4,990	3,594	1,555
15	Turks & Caicos	10			3
	TOTAL	20,754	10,651	7,232	4,928

Note: A CXC "pass" is taken as General Proficiency Grades I and II.

Source: CXC statistics (1990)

Table A-21: PROGRESSION LEVELS: SECONDARY TO "A" LEVEL, SELECTED COUNTRIES (1986/87)

	Territory	Final Year Secondary Enrollment	1st Year "A" level Enrollment	Progression Rate (percent)
1	Antigua/Barbuda	468	58	12
2	Barbados	5,620	450	8
3	Belize	1,328	133	10
4	Dominica	554	139	25
5	Grenada	1,240	96	8
6	Guyana	4,838	216	4
7	Jamaica	9,936	1,600	16
8	St. Kitts-Nevis	816	61	7
9	St. Lucia	676	115	17
10	St. Vincent	1,400	76	5
11	Trinidad/Tobago	17,350	2,000	12

Source: CXC (1988)

Table 22: SELECTIVITY RATIOS: CXC OUTPUT AND TERTIARY ENROLLMENT, BY COUNTRY

	Territory	No. 4+ passes (1990) (1) (b)	No. 4+ passes (1990) (2)	Annual 'A' Level Enrollment (3) (a)	Annual Tertiary Enrollment (4) (a)	Selectivity Ratio 3/1	Selectivity Ratio 4/1	Selectivity Ratio 4/2
1	Antigua/Barbuda	83	113	54	265	0.65	3.19	2.35
2	Anguilla	7	12	9	9	1.29	1.29	0.75
3	Barbados	536	738	450	2,100	0.84	3.92	2.85
4	Belize	72	114	130	675	1.81	9.38	5.92
5	Dominica	105	158	76	230	0.72	2.19	1.46
6	Grenada	87	154	96	270	1.10	3.10	1.75
7	Guyana	294	502	220	1,900	0.75	6.46	3.78
8	Jamaica	1,967	3,206	1,600	7,500	0.81	3.81	2.34
9	Montserrat	21	29	13	70	0.62	3.33	2.41
10	St. Kitts-Nevis	70	83	60	180	0.86	2.57	2.17
11	St. Lucia	260	322	116	351	0.45	1.35	1.09
12	St. Vincent	136	230	76	202	0.56	1.49	0.88
13	Trinidad/Tobago	3,594	4,990	2,150	4,550	0.60	1.27	0.91
	TOTAL	7,232	10,651	5,050	18,302			

Notes: (a) average enrollments 1985-90.
(b) includes only students taking general proficiency only.

Sources: CXC statistical flow-charts (1990); Ministries of Education statistics

Table A-23: OECS: SECONDARY SCHOOL TEACHING FORCE PROFILE, 1990

Territory	With CXC	With "A" Levels	Primary School Trained	Total Requiring Secondary Teacher Training
1 Anguilla	18	9	13	40
2 Antigua/Barbuda	94	23	59	176
3 British Virgin Is.	11	5	2	18
4 Dominica	73	48	15	136
5 Grenada	108	54	27	189
6 Montserrat	16	2	6	24
7 St. Kitts-Nevis	103	71	84	258
8 St. Lucia	72	61	57	190
9 St. Vincent	170	56	119	345
TOTAL	665	329	382	1,376

Note: Figures do not include technical teachers.

Source: UWI, Barbados estimations

(iii) HIGHER EDUCATION TABLES

Table A-24: ENROLLMENT IN HIGHER EDUCATION

Country	Caribbean: 1960-Latest (000's) 1960	1970	1980	Latest
Barbados	0.1	0.4	1.0	1.7
Dominican Rep.	3.4	23.5	42.4	139.3
Guyana	0.2	1.1	1.6	2.2
Haiti	n.a.	n.a.	n.a.	6.3
Jamaica	0.4	1.8	4.2	5.2
Non-Campus Countries a/	0.1	0.4	0.5	0.6
Trinidad	0.1	1.3	2.7	4.2
Suriname	0.4	0.3	2.4	2.9
Total	4.68	28.8	54.8	162.4

a/ English speaking non-campus countries.

Source: UWI (various); UG estimations; Winkler (1990).

Table A-25: ENROLLMENT AT UWI AND UG: PER 100,000 POPULATION: ENGLISH SPEAKING CARIBBEAN (1987)

Country	Enrollment per 100,000 Population
English-Speaking Caribbean	
Anguilla	114
Antigua-Barbuda	63
Bahamas	26
Barbados	620
Belize	23
British Virgin Islands	145
Dominica	69
Grenada	76
Guyana a/	296
Jamaica	203
Montserrat	317
St. Kitts-Nevis	126
St. Lucia	74
St. Vincent	61
Trinidad-Tobago	341
Turks-Caicos	292
Others	
Dominican Republic	1,804
Haiti	101
Asia and Middle East	650
Latin America	1,250

a/ Includes both UWI and UG enrollments.

Source: World Bank (1988d); World Bank (1989c); UWI (1990); Winkler (1990); UG (1988)

Table A-26: HIGHER EDUCATION ENROLLMENT RATIOS CARIBBEAN COUNTRIES: 1988 (percent)a/

Country	Enrollment Ratio
Anguilla	0.8
Antigua-Barbuda	1.0
Bahamas	0.2
Barbados	4.9
Belize	0.2
British Virgin Islands	1.3
Dominica	0.6
Dominican Rep.	13.8
Grenada	0.5
Haiti	1.0
Guyana	3.1
Jamaica	1.6
Montserrat	3.8
St. Kitts-Nevis	1.1
St. Lucia	0.6
St. Vincent	0.5
Suriname	8.0
Trinidad-Tobago	3.4
Turks-Caicos	3.5

a/ Ratio based on percent of 20-24 year olds in the population.

Source: UWI (1988); UNECLA (1988); Winkler (1990), UG (1988)

Table A-27: ENROLLMENT PATTERNS AT UNIVERSITY OF GUYANA BY FACULTY: SELECTED YEARS

Faculty	1973	1978	1983	1989
Arts	447	284	209	224
Education	91	281	273	203
Natural Science	271	273	137	131
Social Studies	350	551	516	1,000
Technology	226	146	209	251
Agriculture	-	25	72	72
Health Science	-	-	41	228

Source: UG (1989)

Table A-28: ENROLLMENT TRENDS BY FACULTY UWI: SELECTED YEARS

	1963/64	1973/74	1983/84	1988/89
Agriculture	108	206	330	362
Arts and General Studies	840	1,855	2,155	2,375
Education	44	220	431	524
Engineering	150	369	568	607
Law	-	308	341	345
Medicine	340	593	647	652
Natural Sciences	478	1,572	2,067	2,240
Social Science	195	962	2,420	3,447

Source: UWI (1990)

Table A-29: PROPORTION OF ENROLLMENTS IN HIGHER DEGREES: BY CAMPUS, 1988

	Mona	Cave Hill	St. Augustine
Higher Degree Enrollment	764	127	616
Total Campus Enrollment	5,235	2,103	4,156
% Higher Degree	14.6	6.0	14.8

Source: UWI (1988)

Table A-30: HIGHER DEGREE ENROLLMENT UWI: BY COUNTRY OF ORIGIN (1988)

	Barbados	Trinidad	Jamaica	NCC	Total
Higher Degree Enrollment	103	602	606	106	1,507
% Total	6.9	40.0	46.1	7.0	100
% Total UWI Enrollment	14.3	35.3	43.7	5.1	98.5 a/

a/ 1.5% of enrollment from "other" countries.

Source: UWI (1987); UWI Development Plan (1990)

Table A-31: TRENDS IN ECONOMIC COSTS: UWI 1984, 1990

Faculty	Campus a/	Economic Costs US$ p.a. 1984/85 a/	1990 a/
Arts and General Studies	M	2,500	4,350
	St. A	9,300	6,345
	CH	5,600	9,250
Law	M	3,130	5,700
	St. A	11,000	9,400
	CH	6,650	10,700
Education	M	2,980	4,930
	St. A	n.a.	5,400
	CH	6,850	12,500
Natural Sciences	M	3,260	5,650
	St. A	11,460	7,780
	CH	8,200	12,650
Agriculture	St. A	17,600	11,280
Engineering	St. A	17,600	11,280
Medicine (Non-Clinical)	M	4,400	6,960
Medicine (Clinical)	M	5,860	8,120
	St. A	23,350	13,000
	CH	14,850	29,500

a/ From 1984 onwards, individual campuses set their cost levels.
b/ M is Mona, St. A is St. Augustine and CH is Cave Hill.

Source: UWI, 1990; Office of University Services, UWI

Table A-32: COST-SHARING: JAMAICAN STUDENTS: DIFFERENT UWI CAMPUSES (1990) (US$ p.a.)

	Government	Private a/	
Campus	Faculty	Contribution	Contribution
Mona	Natural Science	3,955 (46%)	4,695 (54%)
St. Augustine	Engineering	7,900 (48%)	8,580 (52%)
Cave Hill	Law	7,500 (41%)	10,650 (59%)

a/ Includes estimated 'CESS' contributions.

Source: UWI (1990)

Table A-33: COST-SHARING: TRINIDAD STUDENTS: ST. AUGUSTINE CAMPUS (US$ A YEAR)

Faculty (in Trinidad)	Government Contribution	Private Contribution a/
Arts and General Studies	6,000 (50.4%)	5,900 (49.6%)
Engineering	10,380 (63.0%)	6,100 (37.0%)
Medicine	12,300 (67.9%)	5,800 (32.1%)

a/ Includes estimated 'CESS' contributions.

Source: UWI (1990)

Table A-34: COST-SHARING: BARBADIAN STUDENTS: DIFFERENT UWI CAMPUSES (US$ per year)

Faculty	Government Contribution	Private Contribution
Arts and General Studies (Cave Hill)	9,250 (57%)	6,900 (43%)
Law (Cave Hill)	10,700 (60%)	6,900 (40%)
Engineering (St. Augustine)	11,280 (68%)	5,200 (32%)

Source: UWI (1990)

Table A-35: ESTIMATED PRIVATE COSTS a/ AS PROPORTION OF PER CAPITA GNP

	Place of Study		
Country of Origin	Jamaica	Trinidad	Barbados
Jamaica	4.3	7.9	9.9
Trinidad	0.9	1.8	2.1
Barbados	0.5	0.9	1.2
OECS b/	1.9	3.2	4.3

a/ Boarding costs based on UWI standard charges.
b/ Based on median per capita GNP.

Source: UWI 1990

Table A-36: SOURCE OF PRIVATE FINANCING: UWI (MONA), 1986

	Off Campus (%)	Hall Residents (%)
Family/Relatives	60	75
Student Loan	41	49
University Loan	3	2
Scholarships	5	12
Personal Savings	42	30
Employment Income	24	8

Source: EEC (1989)

Table A-37: PROPORTION OF PART-TIME ENROLLMENT: UWI AND UG (1988)

	Mona	Cave Hill	St. Augustine	UG
Full-time	3,099 (80%)	1,174 (65%)	2,639 (87%)	1,291 (59%)
Part-time	787 (20%)	638 (35%)	387 (13%)	901 (41%)

Note: 1. UWI figures for first degrees only.
2. UG figures include degree and certificate programs.

Source: UWI (1988); UG (1988)

Table A-38: BARBADOS OVERSEAS TRAINING (1990)

Subject Areas	Number of Students
Actuarial Science	13
Architecture	15
Art Education	17
Business	21
Building/Surveying	10
Economics/Accounting	24
Computer Science	22
Engineering	86
Management	42

Source: Barbados Scholarships Digest (1990)

Table A-39: UWI: ENROLLMENT OF WOMEN BY FACULTY: VARIOUS YEAR (percentage)

	1963/64	1973/74	1983/84	1988/89
Agriculture	3	23	41	44
Arts and General Studies	47	63	74	74
Education	61	54	63	73
Engineering	0	3	15	12
Law	-	31	55	58
Medicine	24	34	38	41
Natural Sciences	33	37	41	48
Social Science	19	35	52	55
Higher Degrees	53	31	51	50

Source: UWI (various years)

Table A-40: UWI AND UG GRADUATE OUTPUT AS A PROPORTION OF ESTIMATED LABOR FORCE IN 2000: SELECTED COUNTRIES

Country	Annual Output (1988)	Estimated Work Force (2000)	Output (%) Work Force 2000
Barbados	212	115	0.18
Belize	6	62	0.01
Dominica	16	29	0.06
Grenada	13	34	0.04
Guyana	327	235	0.14
Montserrat	15	5	0.30
St. Kitts-Nevis	14	18	0.08
St. Lucia	26	45	0.06
St. Vincent	22	36	0.06
Trinidad	631	430	0.15

Note: Output based on first degrees only.

Source: Output from UWI and UG; estimated work force from Zaba (1987) in Bourne (1988) (low estimates)

Table A-41: NUMBER OF GRADUATES FOR THE ACADEMIC YEARS 1966/67 TO 1987/88 BY YEAR AND FACULTY: UNIVERSITY OF GUYANA

	Faculties							
Year	Agriculture	Arts	Education	Health Sciences	Natural Sciences	Social Sciences	Technology	Total
1967	-	12	-	-	2	17	-	31
1968	-	17	-	-	10	22	-	49
1969	-	32	26	-	25	30	-	113
1970	-	38	22	-	10	26	-	96
1971	-	49	25	-	25	37	34	170
1972	-	36	33	-	36	53	48	206
1973	-	57	48	-	26	53	31	215
1974	-	82	80	-	46	61	71	340
1975	-	103	70	-	52	91	88	404
1976	-	83	101	-	65	163	81	493
1977	-	126	121	-	53	168	96	564
1978	-	28	208	-	65	104	41	446
1979	-	32	151	-	94	156	52	485
1980	-	49	35	-	96	186	96	462
1981	5	61	109	-	91	153	91	510
1982	5	66	53	33	79	169	99	504
1983	8	50	30	70	34	149	98	439
1984	25	44	64	35	25	122	88	403
1985	13	49	103	14	28	136	83	426
1986	20	48	49	36	29	100	64	346
1987	11	26	49	48	28	118	69	349
1988	16	13	52	59	18	94	75	327
Total	103	1,101	1,429	295	937	2,208	1,305	7,378

Note: Figures include first degree, certificate and diploma graduates.

Source: Admissions Division, Office of the Registrar, UG

Table A-42: DISTRIBUTION OF CERTIFICATES AND DIPLOMAS BY COUNTRY: 1954-88: UWI

Country	Total	% of Overall Total
Barbados	933	9.6
Jamaica	4,795	49.3
NCCs	926	9.5
Trinidad	2,722	27.9
Others	357	3.7

Source: UWI (1989)

Table A-43: UWI CAVE HILL - CORRELATION OF ENTRY QUALIFICATIONS WITH DEGREE RESULTS, 1971-78

Route/Faculty	Graduation Rates		Fail/Drop-Out Rates	
	2 A-levels (%)	Other a/ (%)	2 A-levels (%)	Other a/ (%)
Science				
Direct Entry	78	63-100	13	29
Via Prelim.	72	41-61	23	30-50
Part-time	41	15-40	30	55
Social Sciences				
Direct Entry	80	50-72	8	25
Part-time	47	15-56	40	40-50
Arts/General Studies				
Direct Entry	83	64-98	16	25
Part-time	68	33-67	23	25-30
Law				
Direct Entry (year 1)	88	64-84	9	19
Direct Entry (year 2)	96	96	3	4
Part-time (year 1)	100	81-87	-	15

a/ "Other" includes various diplomas, one 'A' level, CXC/'O' levels.

Source: UWI (1986)

Table A-44: PERFORMANCE OF CHALLENGE STUDENTS: 1986/87: UWI

Course	No. of Students	Courses Entered	Courses Passed	% Pass Rate
Certificate in Public Administration	207	473	258	55
B. Sc. (Social Science: Year 1, Mona)	128	286	171	60
Certificate in Education	56	392	n.a.	n.a.
B. Sc. (Social Science: Year 1, Cave Hill)	112	230	112	49
B. Sc. (Social Science: Year 1, Trinidad)	52	111	50	45

Source: Office of the University Services (East Caribbean)

Table A-45: UWI AND UG UNIT COSTS COMPARED TO TERTIARY LEVEL COSTS (US$)

Country/Region	University (1)	Tertiary (2)	Ratio $\frac{(1)}{(2)}$
Bahamas	4,350	1,200	3.6
Barbados	9,250	1,819	5.1
Belize	4,350	700	6.2
Guyana	2,431	1,200	2.0
Jamaica	4,350	639	6.8
OECS	9,250	1,744	5.3
Trinidad	6,345	1,866	3.4

Note: University costs based on Faculty of Arts "economic cost". OECS costs based on attendance costs at Barbados campus; median figure for tertiary institutions used.

Source: See text

Table A-46: OECS Enrollments: UWI, UVI, UWI "CHALLENGE" (1987/89)

Country	UWI (1987)	UVI (1989)	UWI Challenge (1987)	Total
Anguilla	8	6	0	14
Antigua	52	14	52	118
Dominica	56	21	54	131
Grenada	76	2	30	108
Montserrat	38	2	28	68
St. Kitts-Nevis	54	56	59	169
St. Lucia	108	-	60	168
BVI	16	27	-	43
St. Vincent	75	-	20	95
Total	483	128	303	914

Source: UWI (1988); Office of University Services (UWI)

Table A-47: COMPARISON OF 2 "A" LEVEL OUTPUT AND ADMISSION TO UWI AND UG FIRST DEGREES: BY COUNTRY

Country	2 "A" level Output (1990) a/	Average Annual Admissions (1986/88) b/	Ratio
Anguilla	2	2	1.0
Antigua	26	15	0.6
Barbados	158	438	2.8
Belize	20	11	0.6
Dominica	24	15	0.6
Grenada	20	23	0.8
Guyana	74	250	3.4
Jamaica	500	1,245	2.9
Montserrat	6	12	2.0
St. Kitts-Nevis	22	16	0.7
St. Lucia	78	30	0.4
St. Vincent	34	21	0.6
Trinidad	1,040	1,029	1.0

a/ Scaled estimates from 1986 data.
b/ Average of three years 1986, 1987, 1988.

Source: UWI and UG (1988); University of Cambridge Exams Syndicate (1986)

Table A-48: COMPARISON OF "5+ CXC PASSES" TO UG AND UWI ADMISSION BY COUNTRY: FIRST DEGREES

Country	5+ CXC passes Output (1990)	Average Annual Admissions (1986/88) a/	Ratio
Anguilla	5	2	0.4
Antigua	59	15	0.3
Barbados	386	438	1.1
BVI	4	5	1.3
Belize	49	11	0.2
Dominica	56	15	0.3
Grenada	46	23	0.5
Guyana	182	250	1.4
Jamaica	1,228	1,245	1.0
Montserrat	16	12	0.8
St. Kitts-Nevis	53	16	0.3
St. Lucia	189	30	0.2
St. Vincent	81	21	0.3
Trinidad	2,555	1,029	0.4
TCI	3	10	3.3

a/ Average for three years, 1986, 1987, 1988.

Source: UWI and UG (1988); CXC (1990)

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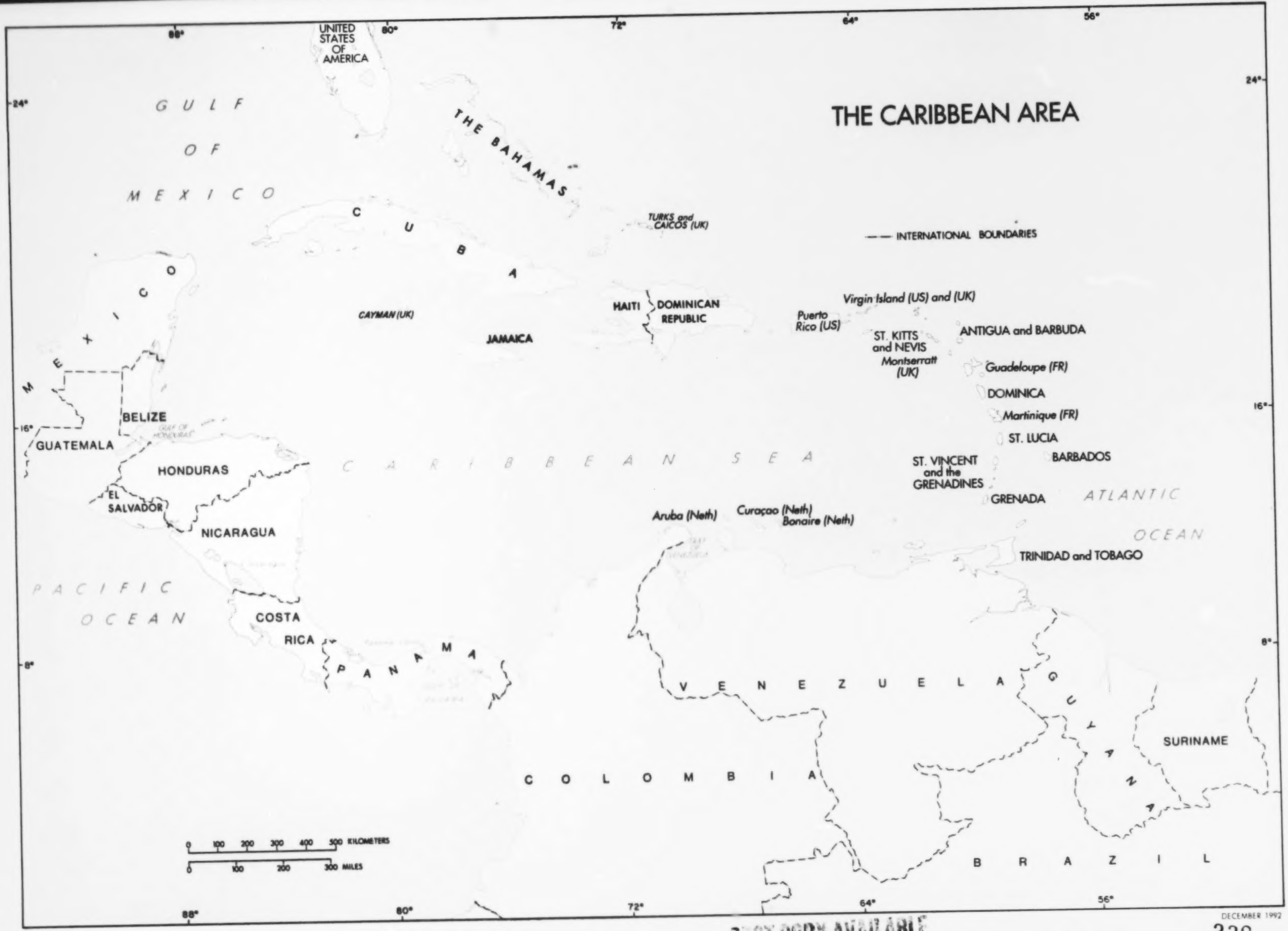

THE CARIBBEAN AREA

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Curaçao (Neth)
Bonaire (Neth)
TRINIDAD and TOBAGO
PACIFIC OCEAN
COSTA RICA
PANAMA
VENEZUELA
GUYANA
SURINAME
COLOMBIA
BRAZIL
0 100 200 300 400 500 KILOMETERS
0 100 200 300 MILES
88° 80° 72° 64° 56°
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DECEMBER 1992

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